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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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Coal Stoppage and Industry

THE hopes of a settlement raised by the mineowners' proposals for reopening negotiations have been promptly shattered by the uncompromising attitude of the miners' executive, and the deadlock continues. It must, of course, come to an end some time, but while the parties are leisurely contemplating each other and the Government are almost as leisurely looking on at both, the industries of the country are suffering heavily, and each day adds to the actual and potential loss. In some industries steps have already been taken to secure Continental and American coal, which, in spite of transport difficulties, is being got through. One result of this importation, in the case of large consumers who have hitherto relied on British supplies, is to draw attention to the much cleaner condition in which foreign coal is prepared for the market as compared with British coal, which is marketed very much in the crude condition in which it is hewn by the miner. Westphalian coal, for example, some consignments of which have reached this country, is washed before being put on the market, and the ash content is found to be remarkably small. This higher standard of cleanliness is appealing to British users, and once more it is possible that the British industry may suffer from its almost studied neglect of scientific methods which have been recommended for years. Perhaps, really, the gravest charge that the Coal Commission brings against the owners is that, not only have they failed to appreciate the meaning and importance of chemical and other research, but that even now they refuse to recognise the organisation of research as a primary obligation on themselves. What hope there can be of real reconstruction from a mentality of this order, it is difficult to see.

Among opinions on the present situation attention may be drawn to that of Sir Max Muspratt who emphasises the urgent need of industrial leaders taking a larger share in such matters. The control of industry has been allowed to drift too largely into the hands of financiers on one side and of Labour organisers on the other, and many will heartily endorse Sir Max's plea for a more vigorous leadership of industry by practical industrialists themselves—the only people who really understand it.

A Carbon Disulphide Study

AN interesting study, that will tend to modify views which have for long been accepted, has been made by Mr. Wilbert Huff, of the Johns Hopkins University, Baltimore, in connection with the origin of carbon disulphide evolved during the carbonisation of coal. Of the sulphur compounds evolved from coal, sulphuretted hydrogen is, of course, known to be a primary product of distillation, being in fact one of the first compounds to be released. With carbon disulphide, however, it has always been more or less accepted that the case is different, and that this, together with some of the remoter sulphur compounds, is formed at higher temperatures as a result of direct combination of part of the sulphur with carbon. It has, indeed, been taken for granted that the higher the temperature of distillation the greater will be the quantity of sulphur driven off from the coke, extended travel of the gas through heated coke or in contact with hot surfaces accounting for the decomposition of sulphuretted hydrogen and the subsequent formation of carbon disulphide. Accordingly, when secondary reaction takes place, the easily removable sulphuretted hydrogen gives way, in part, to undesirable compounds which are only eliminated with considerable trouble.

Mr. Huff, however, apparently considered that the principle relating to the formation of secondary compounds in this manner was open to be challenged, and he set himself the task of endeavouring to determine the exact nature of the reactions which produce carbon disulphide. It is unnecessary to describe in detail here the careful experiments that were conducted, for it is upon the results obtained that interest is mainly centred. In brief, it was found that carbon disulphide

was yielded when an inert gas was passed over hot coke, but when coal gas (containing carbon disulphide) was subjected to the same treatment the CS_2 was reduced, and, moreover, to some considerable extent. Again, the gas resulting from carbonising coal slowly was practically free from carbon disulphide, whereas when the coal was heated rapidly, and in such a manner that a marked temperature difference was maintained between the outside and the inside of the mass, a gas containing an appreciable amount of carbon disulphide was given. From these results, accordingly, Mr. Huff considers it justifiable to infer that carbon disulphide is not formed by secondary reaction as popularly supposed, but that it is a direct product of carbonisation. There is no question that the rate of heating must be a factor of outstanding influence upon the ultimate chemical form of the sulphur evolved, upon the mode of decomposition of the sulphur in the coal, the so-called re-absorption of the sulphur during carbonisation, and the amount and distribution of the sulphur in the coke. It is to be hoped that Mr. Huff will find time to continue his investigation in connection with the influence of the rate of heating, for carbon disulphide is a product of carbonisation which could well be done without, and it is by no means unreasonable to expect that were its exact mode of formation to be determined it might be possible so to modify the process of carbonisation as to reduce substantially the quantity in which CS_2 is present.

Acid Impurities in Commercial Sulphate

It is not to be pretended that the constituents present in commercial sulphate of ammonia that give an acid reaction have not been detected or that to the analytical chemist they are not well known, but it certainly is a fact that those who deal in and utilise this particular fertiliser have usually a surprising lack of knowledge as to their exact nature. For this reason it is particularly instructive to refer to the conclusions arrived at by Mr. H. M. Lowe, M.Sc., who has lately suggested the best routine to be followed in the determination of the acidity of the commercial salt. Mr. Lowe has quite correctly pointed to the fact that before neutral salt came to the fore we used to think in terms of "free acid" and conceived this to be the acid over and above that required to combine with ammonia to form the sulphate. Now, however, it is recognised that the last 0·025 per cent. of acidity is not due to excess acid. In order, of course, to understand the exact mechanism of acidity it is necessary to have a clear understanding of those impurities that give an acid reaction, and some or all of which may be present.

It is pointed out that (neglecting ammonium bisulphate) phenols in general are such weak acids that they will not affect any indicator likely to be used, while ferrous and ferric sulphate are both acid substances, the former of which reacts but slightly to methyl orange and the latter resembling aluminium sulphate in its acidic character. Mr. Lowe expresses the opinion, however, that probably the main acid-giving impurities are pyridine sulphate and bisulphate together with the sulphates and bisulphates of the homologues of pyridine. These homologues, moreover, are less basic than pyridine itself; accordingly their sulphates are more acid than pyridine sulphate, and, again, pyridine sulphate is no more a neutral salt than is sodium carbonate. The point at issue, however, is as to whether or not normal pyridine sulphate does actually exist in dried commercial sulphate of ammonia, and Mr. Lowe concludes, as a result of his own experiments, that the pyridine exists, not as the normal sulphate, but as the bisulphate. This is an interesting point, and one, perhaps, that does not assist in simplifying the problem of determining absolute acidity, and that raises once more the question as to which of the present tests is likely to give the most accurate results.

Taxing the Chemical Society

The authorities of the Inland Revenue, in their too diligent desire to increase their income, are led occasionally into some rather stupid acts; but we cannot recall any step exhibiting a more complete absence of imagination than their intention to challenge the right of the Chemical Society as a charitable institution to recover the income tax deducted at the source from the interest on its invested capital. For eighty years, as the President (Professor H. B. Baker) and the Treasurer (Professor Jocelyn Thorpe) point out, the Society has published freely new knowledge in chemistry and has carried a financial burden which could not have been borne had not Governments in the past provided rent-free accommodation and relieved the Society from taxation. "The great increase," they state, "which has taken place, and is still taking place, in the amount of research work in chemistry emanating from our universities and university institutions, renders it difficult, even under present conditions, for the Society to carry out the duties assigned to it by its charter, in view of the fact that within the past seven years its expenditure has increased by some £7,000 a year. The margin between solvency and bankruptcy is small, and may disappear if the Society is subjected to the taxation suggested." This protest will be cordially supported by all who recognise the importance of scientific research, and it should not be difficult, if the Inland Revenue authorities persist, to raise the matter in Parliament.

Popular Chemical Broadcasts

Some time ago we suggested that from the point of view of making the practical value of chemistry popularly understood and appreciated, a ten minutes' broadcast to a great public, who could not otherwise be reached, offers an unusual opportunity. Chemical broadcasts, as we felt compelled to add at the time, are beset by two dangers—the danger of descending into technical depths to which the hearer firmly declines to follow the explorer, and the equal, if not greater, danger of talking in an artificially popular style which the listener at once detects and in all probability resents It is, however, gratifying to find that the broadcasting authorities are making chemistry and other branches of science a much more regular feature of their nightly popular talks, and still more so to feel that, from the experience of what has already been done, the chemist is quite capable of putting himself in the position of his hearers, of taking up points of universal human

interest, and of making a broad appeal which can be readily assimilated and appreciated by those who have never troubled to consider the incidence of chemistry on everyday necessities.

The pioneer in these homely chemical chats was, we believe, Mr. W. J. U. Woolcock, whose address might very well be taken as a model by those in whose hands the chemical talks may rest in future. Then there followed the fascinating series of talks by Sir William Bragg, while another notable example was the address some few months ago by Dr. G. C. Clayton. It is to be noted, however, that the younger generation of chemists are now taking up the habit with enthusiasm, and probably one of the most noteworthy contributions to chemical broadcasting is the series of six "talks" entitled "Materials We Wear," which have lately been concluded by Mr. A. J. Hall, the chief chemist to the Silver Springs Bleaching and Dyeing Co. Mr. Hall will be recognised as the author of the recently published book on *Cotton Cellulose*, and those who have listened to his broadcasts will agree that they must have gone a considerable way towards assisting the general public to appreciate some of the romance that lies behind the fabrics and garments in daily use and wear. In presenting his subject Mr. Hall dealt seriatim with each of the common fibres, explaining in simple terms their production and essential features, and he succeeded in conveying a wonderfully concise illustration of a technical subject without once descending into abstruse details. The ability to do this is not easily acquired, but it is satisfactory to find that chemists can give as good an account of themselves in the wireless studio as in the works or laboratory. It is to the good of the industry that its rôle in everyday life should be made more generally known in this way.

Chemistry in Textile Industries

THE importance of chemistry in relation to the textile industry, referred to in an editorial note on June 13, 1925, is being increasingly recognised. Chemical science for many years was merely an auxiliary to the textile industry, as illustrated in the operations of bleaching, finishing, and dyeing in the cotton mills of Lancashire, and the woollen mills of Yorkshire. With the advent of artificial silk as manufactured by the cellulose acetate and viscose processes, the chemist assumes an importance equal to that of the textile technologist. Each has a common duty to discharge, which, as was pointed out by Mr. C. F. Cross recently, is the development of an important branch of natural history. A not dissimilar view as regards the importance of chemistry has been expressed by Dr. J. C. Hartogs.

Prosperous as the artificial silk industry has been, and remarkable as its growth has been during the last few years, it is recognised that there is need for fundamental research. The textile industries take advantage of and develop the structural properties of vegetable fibres. While all the higher plants are distinguished by fibrous developments, it is generally conceded that such development must be of an entirely exceptional order, if it is to possess any economic significance. Staple textiles are singularly few, and consist largely of cotton, flax, hemp, ramie, and jute. The basis on which the old-established textile industries have been founded, Mr. Cross suggests, is of a three-fold character, and depends on "structural characteristics, which largely determine spinning qualities, agricultural conditions of massive economic production, and chemical properties of the fibre substances." What apparently is now required is "a re-investigation of the plant world, particularly with a view to finding a form of cellulose with a constitution or structure of the ultimate or chemical order, which, when transformed to artificial fibre, will be found superior to existing types."

Rapid progress and satisfactory profits, such as the artificial silk industry has recently enjoyed, engender fixed ideas, which are calculated to close rather than to open the avenues of research. To the discerning, the on-rush of keen competition can be perceived, and it is certain that this will stimulate fundamental investigation in a way nothing else will do.

Protection Against Lead Poisoning

THE debate in the House of Commons on the motion for the second reading of the Lead Paint (Protection Against Poisoning Bill) illustrated once more the importance of having among our legislators men of scientific and technical knowledge. The Bill proposes to prevent lead poisoning by regulations regarding wet rubbing down, medical examination, etc. The motion was supported by (among others) Dr. G. C. Clayton, whose speech is reported elsewhere in this issue, and Mr. Harney, who was of opinion that the Convention passed at Geneva in 1921 was due to pressure exercised by French and Belgian interests, who wished, Mr. Harney said, "to shove out our white lead in order that white zinc might step in." The motion was opposed by various members on the grounds —among others—that it did not ratify the 1921 Geneva Convention, that wet rubbing down did not prevent lead poisoning, and that there would be great difficulties involved in the necessary inspection of painting operations in houses. The motion for the second reading was carried by 131 votes to 56.

Books Received

ZINC OXIDE. By Dalton B. Faloon. London: Constable & Co., Ltd. Pp. 144. 12s.

THERMODYNAMICS. By C. N. Hinshelwood. London: Methuen & Co., Ltd. Pp. 180. 6s.

A TEXT-BOOK OF ORGANIC CHEMISTRY. By John Read. London: G. Bell and Sons, Ltd. Pp. 680. 12s. 6d.

PRACTICAL GLASS MANIPULATION. By D. B. Briggs. London: Crosby Lockwood and Son. Pp. 39. 2s. 6d.

The Calendar

June 11–18	International Oil, Chemical and Colour Trades Exhibition.	Royal Agricultural Hall, London.
14	Faraday Society: General Discussion on "Explosive Reactions in Gaseous Media." 2.30 p.m.	Institution of Mechanical Engineers, Storey's Gate, Westminster, London.
17	Chemical Society: Ordinary Scientific Meeting. 8 p.m.	Burlington House, Piccadilly, London.
22	National Physical Laboratory: Annual Visit of Inspection. 3 to 6 p.m.	Teddington.
July 19	Institution of Chemical Engineers: Fourth Annual Corporate Meeting.	Committee Room D, Central Hall, Westminster, London.
19	Institution of Chemical Engineers: Annual Dinner. 6.30 for 7 p.m.	Great Central Hotel, London.

Prices and New Forms of Nitrogen Fertilisers.—(II)

Mr. F. C. O. Speyer's Paper and Tables

We publish below the conclusion of Mr. F. C. O. Speyer's paper with statistical tables presented to the conference at Biarritz on April 27 on "The Determination of Price and Creation of New Forms of Nitrogen Fertilisers as Factors in Propaganda." The first instalment, together with the paper by Dr. Bueb, of Berlin, appeared in THE CHEMICAL AGE *of June 5.*

Variety of Nitrogen Forms

THE list of new nitrogen compounds which they have made available for agriculture, contained in Dr. Bueb's paper, is eloquent testimony to the progress already achieved and to the never-resting spirit of enterprise and investigation which continues to animate them. That the principle of the desirability of diversity, within the limits of uniformity, has found practical acceptance by the leading producers' organisations on this continent is evinced by the fact that our old friends the Comptoir Français du Sulfate d'Ammoniaque have now become the Comptoir Français de l'Azote; that the Verkoopkantoor in Holland and the Belgian Comptoir have distributed nitrogen products other than sulphate of ammonia, and last, but by no means least, that the Società Montecatini—the latest organisation to enter the lists of producers of synthetic nitrogen on a large scale—also makes and sells various forms of nitrogen.

Even in conservative England we are moving in the same direction and an arrangement has been made with the Stickstoff-Syndikat whereby such of their new nitrogen products as are likely to suit British conditions will be made available for British farmers. We hope that this arrangement will mean considerable increase in the use of nitrogen for grassland in England.

But although these new forms of nitrogen, especially those combined with phosphoric acid and potash, are doubtless destined to play an important part in promoting a general increase in the use of nitrogen, there seems room for considerable further expansion in the use of the well-known forms, such as ammonium sulphate. It is therefore of interest to try and ascertain exactly for how much the price factor has counted in particular instances.

Pre-War Prices

During the eight years preceding the war the prices of ammonium sulphate were on an average lower than the parity of prices for Chile nitrate in the British home market, and in one or two years the difference was very largely in favour of sulphate. It was certainly profitable for the farmer to use nitrogen for many crops at these pre-war prices for nitrogen, and it was therefore to be expected that whenever the one form of nitrogen was markedly cheaper than the other, a corresponding alteration in the consumption of each would take place.

In spite of the fact that fairly efficient propaganda work was done for ammonium sulphate, practically no movement of this kind was observable and the pre-war consumption of ammonium sulphate in Great Britain remained at 40,000 to 60,000 tons, while about 80,000 tons of nitrate were used.

It needed the overwhelming stimulus of the margin between war prices for agricultural produce and pre-war prices for ammonium sulphate to bring about a real increase in consumption. And it is significant to note that while the consumption in the United Kingdom rose for agricultural purposes alone to a maximum of 269,000 tons in 1918-19, at prices which

TABLE I.

All the figures in Table I are expressed as tons of 2,240 lbs. of pure Nitrogen.	Estimated Total Consumption of Nitrogen for agricultural purposes only, in tons of 2,240 lbs. of pure Nitrogen (in the form of Chilean Nitrate of Soda, Ammonium Sulphate, Calcium Nitrate, Cyanamide, Urea, etc.)		Estimated Total Production for agricultural purposes, in tons of 2,240 lbs. of pure Nitrogen, of Ammonium Sulphate only.		Estimated Total Consumption for agricultural purposes, in tons of 2,240 lbs. of pure Nitrogen, of Ammonium Sulphate only.	
	Fertiliser Year.		Fertiliser Year.			
	1913–14	1923–24	1923–24	1924–25	1923–24	1924–25
Group 1.—Germany, United Kingdom, France, Belgium, Holland, Scandinavia, North Russia, Poland, Czecho-Slovakia and Switzerland	385,475	545,470	384,785	423,530	319,123	334,678
Group 2.—Countries bordering the Mediterranean other than those in Group 1	53,120	66,870	7,175	7,790	28,567	43,755
Group 3.—Indian Empire, Philippines, Straits, Dutch East Indies, Siam, Japan and China	43,240	94,045	26,035	33,190	90,753	92,803
Group 4.—Africa and neighbouring islands (excluding Egypt)	1,545	1,700	205	205	1,486	1,502
Group 5.—United States, Canada, Central and South America, West Indian Islands, Cuba and Hawaii	111,695	147,290	85,587	95,940	62,880	88,052
Group 6.—Australia and New Zealand	250	2,150	3,095	3,485	2,111	2,462
	595,325	857,525	506,882	564,140	504,920	563,252
Estimated consumption of Chilean Nitrate of Soda for industrial purposes not included in above..	95,750	108,750	—	—	—	—
	1923–24	1924–25				
Estimated total production of all By-Product and Synthetic forms of Nitrogen	680,000	745,100	—	—	—	—
Estimated deliveries of Chilean Nitrate of Soda in consuming markets	340,000	363,000	—	—	—	—
	1,020,000	1,108,100	—	—	—	—
Estimated total for Agricultural Consumption	857,525	983,100	—	—	—	—

had by that time risen to slightly over pre-war level, no less than 233,000 tons of ammonium sulphate were still used in 1919-20 at about £22 per ton. After the unfortunate boom years 1920-21, prices were reduced to £15-£16 per ton, but this reduction was not sufficient to stem the tide of disillusionment caused by the fall in price of agricultural products, which was leading farmers to revert to grassland. Accordingly, we find the consumption for 1921-22 reduced to 136,000 tons. Since then prices for ammonium sulphate have been continuously lower, at a level ranging from about £15 to £12 per ton, and consumption has again slowly risen to about 160,000 tons. The British consumption of Chile nitrate has meanwhile fallen from 80,000 to 40,000 tons per annum.

There were of course numerous other factors at work which influenced the consumption, but I think we shall not be seriously wrong if we conclude from the above facts and figures that it needs something more than an ordinary advantage in price to bring about a change over from one form of nitrogen to another on the part of the consumer; and further, that once an initial price sufficiently attractive to bring about the change has been maintained for some time, it can be increased largely, provided the effective margin of profit to the farmer remains large, but that as soon as a rapid fall in the value of agricultural produce takes place, a simultaneous reduction in the price of nitrogen is not of itself sufficient to arrest the tendency to "economise" by not using nitrogen. The moral for nitrogen producers seems to be that the temptation to raise prices because of any temporary increase in agricultural prosperity must be resisted.

Consumption Figures

These truths are now being realised in France owing to much the same circumstances which Dr. Bueb has described as prevailing in Germany. A few years ago France was only consuming 2·60 lbs. of pure nitrogen per acre of arable land, compared with 4·53 lbs. for the United Kingdom and 10·3 lbs. for Germany.

To-day's figures are approximately:

	Arable acreage in millions of acres.	Consumption of pure Nitrogen. lbs. per acre.	Total per annum in tons.
Germany	67	11·2	335,000
France	54	4·5	108,000
United Kingdom	14	5·6	35,000

Owing to the special conditions prevailing in Belgium Denmark and Holland, the consumption of nitrogen per acre in those countries is very much higher, being from twice to three times the German average.

It has required overwhelming economic pressure to raise the consumption of nitrogen in Germany and France (and to a lesser extent in England) to its present level, because these countries were able before the war to count on their exportable surplus of manufactured goods to provide them with foodstuffs which could be grown more cheaply in countries on the periphery of the economic world.

The question therefore arises whether the increase in the output of nitrogen in Germany, France, England and the rest of Europe to a point at which it is possible to provide countries

TABLE II.

World Population.

Population.	Population in millions at nearest census to— 1913.	1924.	Percentage, increase (+) or decrease (−). 1913=100.	Density of Population Inhabitants per sq. km. 1924.	Percentages of World Area and World Population, 1924. Area.	Population.
Europe	467·8	454·7	− 2·8	47·3	7·3	24·5
America, North and Central	133·5	151·9	+ 13·8	6·8	17·0	8·2
America, South	56·5	65·8	+ 16·5	3·4	14·5	3·5
Asia	987·3	1,032·8	+ 4·6	24·6	31·9	55·8
Africa	133·6	139·3	+ 4·2	4·7	22·8	7·5
Australasia	7·6	8·6	+ 13·1	1·0	6·5	0·5
Totals	1,786·3	1,853·1	+ 3·7	87·8	100·0	100·0

TABLE III.

Prices for Feeding Stuffs, Fertilisers and Agricultural Produce in England and Wales Expressed as Index Figures.

	Average 1911–13	1921	1922	1923	1924	1925
(A) *Feeding Stuffs:*						
Barley (Imported)	100	184	132	115	149	144
Oats (Imported)	100	166	147	135	135	146
Maize	100	181	148	152	167	167
Milling Offals	100	179	141	129	150	143
Oil Cakes	100	193	157	138	153	150
Brewers' Grains	100	159	154	132	147	154
Barley Meal and Maize Meal	100	181	138	134	155	153
(B) *Fertilisers:*						
Sulphate of Ammonia	100	133	109	102	96	87
Nitrate of Soda	100	176	139	128	130	123
Basic Slag (30 per cent. Total Phosphate)	100	324	195	140	112	116
Superphosphate	100	258	157	130	128	123
Kainit	100	198	107	80	88	102
(C) *Produce:*						
Wheat (British)	100	219	146	130	152	160
Barley	100	184	141	119	165	148
Oats	100	172	147	135	138	138
Potatoes	100	232	179	113	257	204
Hay	100	151	140	130	101	101
Vegetables	100	246	196	148	165	167
(D) *Milk*	100	263	179	174	170	170

on the economic periphery with relatively cheap supplies of nitrogen, will not ultimately produce a reaction unfavourable to home consumption in the producing countries. If the figures given in the extremely interesting and comprehensive Nitrogen Survey published by the United States Department of Commerce a few years ago can be considered as typical for other great countries which are only now commencing to consume nitrogen on a large scale, there is little doubt about the answer to this question.

The Problem of Population

The conclusion reached in the Nitrogen Survey is that at the present rate of increase in population in the United States, the present capacity for producing fixed nitrogen, together with the normal increase which may be expected from by-product sources, will be hopelessly inadequate to meet that country's needs towards the end of the present decade.

Increase in population means cessation of extensive cultivation and therefore ultimately creates a demand for nitrogen. If this proposition is true for conditions in the United States in ten years' time, it is even more true, certainly of British India, probably also of China, to-day.

In British India you have a population of 320 millions, which has increased at the rate of 100 millions in the last 50 years. Large portions of India are more thickly populated than Belgium. The constant wars on the northern frontiers are due largely to the fact that the barren hill country cannot provide sufficient food for the increasing numbers of hillmen. In the plains the factor which 50 to 100 years ago kept the population in check was an appallingly high rate of mortality. Even in 1918–19 the great influenza epidemic killed no less than 7 million human beings in India. But better provision by the Government against actual famine and the inculcation of more hygienic methods of living are counteracting and decreasing the death rate, so that there is a steadily increasing demand for food and clothing.

That demand can only be satisfied by fertilisers, and the brief experience gained so far points to the fact that nitrogen is the element which is lacking over large portions of that vast country. Up to now comprehensive experiments have only been made on tea gardens, and field experiments in regard to the effect of nitrogen on other crops were practically non-existent up to a year ago. We are now endeavouring to make good this deficiency, and the fact that the consumption of ammonium sulphate has risen from about 6,000 to 20,000 tons per annum during the last eighteen months, shows that a useful beginning has been made.

Merchants, Middlemen and Moneylenders

Here, again, the price factor is of great importance, although it appears in a different form. For in India, as in China, over 90 per cent. of the farmers are smallholders. Owing, among other conditions, to the peculiar social customs which often lead heads of families to mortgage their labour for many years in advance in order to provide dowries for their children or funeral expenses for their relations, land being to a large extent inalienable, cash payments are practically never made. Indeed, a whole chain of merchants, middlemen and moneylenders is at present interposed between the producer and the consumer, so that the price to the latter is often 100 per cent. above the price received by the producer. It is obvious that the consumer is enormously benefited by any reduction in the initial price under these conditions.

Steps are being taken to endeavour to eliminate many of the links in this chain of parasites, but the problem is of such vast dimensions that it is probably only capable of satisfactory solution by a considerable measure of State assistance.

The conditions described above render propaganda work especially difficult, for while in Europe the smallholder can often be easily induced to make experiments because he can afford to pay for the relatively small quantity of fertiliser required for his little plot, in India you have to commence propaganda for nitrogen with the village moneylender, for he it is who decides whether the ryot is to receive the necessary credit.

These examples seem to indicate that, at any rate during the next few decades, every increase in population will surely call forth an additional demand for nitrogen, and that as regards countries on the economic periphery, the standard of living in those which are thickly populated is at present so low that any increase in their own output of agricultural produce will result in an improvement of that standard rather than in an exportable surplus of produce.

As regards thinly populated countries on the periphery, conditions are not so clearly defined and increased use of nitrogen, where it is possible, will probably in certain cases lead to increased exports. A case in point is Western Canada, where we are now conducting some preliminary experiments on wheat on a field scale, in order to get information at present unavailable.

It is tempting to try and look still further ahead and ask whether the western nations in sending nitrogen to the east may not be preparing for themselves that Götterdämmerung which will mean the final extinction of the white race. If that happens, future generations of our race may not be prepared to endorse the estimate of the value of the labours of Dr. Bosch and his coadjutors in other countries, which I ventured to express at the beginning of this paper!

Lead Poisoning Dangers

Dr. Clayton's Speech in the House

In the House of Commons debate on the motion for the second reading of the Lead Paint (Protection Against Poisoning) Bill, Dr. G. C. Clayton (M.P. for Widnes), supporting the motion, said that he thought the Home Secretary had done a very wise thing in bringing in the Bill. In the manufacture of white lead in the factories it was possible by regulations to safeguard the worker, and the reason of that was that the bad effect on the workmen was due to the dust which was produced. Similar dust was produced in house painting in the dry rubbing down process, but they now had a new method, wet rubbing down, which he believed was quite a good method and quite efficient, and that method would do away with the dust which was produced and which was the sole source of the poison. People at one time thought that as the lead paint dried it gave off a poison, but very careful investigations had been made and had proved that no poisonous gas was given off while lead paint was drying. The poisoning was invariably due to dust. It might, of course, be due to dust on the fingers put into the mouth, or dust on the clothes shaken off and breathed, but the main thing was the rubbing down of the old lead paint. He believed that the regulations would make it possible to use lead paint safely.

He was also pleased to see that the Home Secretary had got a clause dealing with protective clothing, because there again there was a serious danger. If a man got lead paint on his clothing and took it home, and it was shaken in the house, lead paint dust could be thrown all over the house, and he hoped the regulations would insist that the working overalls of the painters should not be taken to their homes, because there he saw a serious danger to the household in the dust from the clothing. Otherwise, he thought this measure a great improvement on the prohibition measure; at any rate, until they had given it a fair trial. They wanted to maintain all the industries that they could in this country, and lead paint was an important industry.

In answer to Mr. S. P. Viant, who raised the point of the need of facilities for washing painters' overalls, Dr. Clayton said that in the chemical works they had overalls for the men, which were left behind and washed on the premises. It was quite possible that in the headquarters of the master painters or the painting firms the overalls could be washed, and they need not go home. The men could take them with them when they went to their work and leave them at the headquarters of the firms when they had done with them.

Wellcome Historical Medical Museum

The Wellcome Historical Medical Museum, 54A, Wigmore Street, London, W.1, was partially reopened on June 1. The work of reorganisation is still proceeding, and when completed the arrangement and classification of the collections will be systematised, and the objects made more accessible for inspection and study. The museum is open to members of the medical profession, chemists, pharmacists, nurses and research workers generally from 9 a.m. to 6 p.m. on weekdays, except Saturdays, when the Museum is closed at 1 p.m.

Sir Max Muspratt on Industry

Need of Industrial Leadership

At the Leeds Luncheon Club on Monday, presided over by Colonel Sir Edward A. Brotherton, Sir Max Muspratt, President of the Federation of British Industries, discussed several aspects of the industrial situation. In the pre-industrial era, he said, the territorial system, inherited from the feudal system, found the local government and national government practically controlled by the great territorial magnates. Whatever were the faults of that system, the territorial system produced leaders who led, and it was one of the misfortunes of the present time that we had none who led in the broader sense. With the rise of the industrial era there was an enormous growth in wealth of the country which put the territorial magnates in the shade. For the best part of a century there was a clash between the old territorial and new industrial systems, and in the course of that clash practically all leadership was lost. Fortunately there was a large number of statesmen who conducted the purely political problems ably and well, and so from the political point of view the country got over the transition.

While this was going on two other movements were started, which shifted the leadership from the industrialist, to whom it ought to have belonged, to the financial interest on the one side, and the labour interest on the other. The growth of trade unions, which were as such essential for the individual working-man, came at a time when the middlemen and financiers began to have far more of the total wealth made than the industrialists as a whole, and display of wealth and ostentation created among the poorer classes a sense of inequality and unfairness. The trade unions were captured by the socialists and extremists, yet not ten per cent. of the working men and women were socialists. Industrialists should now resume leadership, and recognise that we were living in a fundamentally changed world. He would like to see more men of this type in Parliament, and particularly on local governing bodies. They should have a thorough grasp of all the problems that arise there, and be able to answer the Labour speakers. Employers also should release their men for civic work, not as representatives of the firm, but as citizens. It was essential for them to study social economics. He had often been appalled at the way some men had been bowled over by Labour leaders, who knew economics, if they only told one side of it.

Sir Hugh Bell, a director of Brunner, Mond and Co., and other companies, speaking at Bishop Auckland on Tuesday, declared that he was being steadily ruined by the unsettled state of industry. His personal position might not matter, but it was important that the industries in which he was engaged should prosper, and he appealed to the workers to consider the position from that point of view.

Carbon Monoxide Dangers

The death occurred last week, under unusual circumstances, of Captain Thomas Robertson Duff, of South Yardley. He was repairing his motor-car in the garage adjoining his house when he was overcome by the fumes. At the inquest, Mrs. Duff stated that her husband told her there was " a knocking " in the engine of the motor-car, and that he was going to try to remedy it. For some time afterwards, at intervals, she heard the engine of the car running, and when she entered the garage she could not see her husband for the smoke and fumes from the engine. The door of the garage was closed. Her husband was unconscious, and was removed to hospital, where he died. The Resident Medical Officer at the General Hospital ascribed death to carbon monoxide poisoning. Mr. T. F. E. Rhead, chief chemist at the Birmingham Gas Department's Laboratory, stated that carbon monoxide would be given off by the engine of the car, and in an unventilated room such as the garage it would have no means of getting away. The Deputy Coroner, in recording a verdict of " Accidental death," said this was the third case of the kind in Birmingham. If repairs had to be done to motor-cars it seemed advisable they should be carried out in the open air because of the danger to life of carbon monoxide poisoning.

German interest in artificial silk has considerably increased, probably as a result of the successful exhibition at the Leipzig Spring Fair. Restriction of production resorted to at the beginning of the year has everywhere been brought to an end.

Fine Chemicals in Parliament

Safeguarding of Industries Act

In the House of Commons, on Tuesday, in committee on the Finance Bill (Clause 10, Continuation and Amendment of Part I of Safeguarding of Industries Act, 1921), Sir P. Cunliffe-Lister said that, in regard to fine chemicals, the pre-war production was about 10 per cent. of our consumption. To-day we were producing something like 75 per cent. of our consumption. There was an extraordinary advance, not only in quantity, but in quality as well, and an export trade was beginning, too. That was all contrary to theory. In insulin, a vitally important drug, which we had entirely developed under the protection of these duties, we had now a very large share not only of the home market but of the world market as well. The quality was quite excellent. He took it that that was why the foreigner was buying it. They had been told, over and over again, how vitally important it was to get an opening for our scientific men and our chemists in industry. The development of this fine chemical industry had made that opening. It had made a commercial profession for these men, with the result that they had got three or four times the number of skilled chemists who were employed before. Again, with these chemicals, prices were falling all the time, and, what was most interesting, the fall in prices was most marked wherever they had competition with a foreign monopoly. Before the war the Germans had a monopoly of metol, and they used to charge even to professional photographers, who got a discount, 21s. a lb. They established the manufacture of metol in this country, and to-day the price was 9s. a lb. There was another feature in connection with these chemicals. They were not only establishing an industry very important in itself—important as a training ground for chemists, important for research, and important to industries—but helping to establish a chemical engineering industry. Orders had been placed by these chemical manufacturers for machinery that they never required before, and that had led to the development of a section of the engineering industry which has not existed hitherto. It was not only of benefit to this country, but they got development within the Empire. In Canada, by reason of the fact that the Empire was in this a protected market, and that Canadian Empire products were admitted free under Part I, the manufacture of synthetic acetic acid had gone up from 1,000 to six or seven thousand tons a year.

Alcohol Manufacture in the Philippines

The manufacture of alcohol in the Philippines has been a successful and progressive industry for the past fifteen years. The chief raw material used hitherto has been the sap of the nipa and coco-nut palms, but just lately important developments have taken place in the direction of utilising the molasses from the sugar mills. The older and cruder methods of the tuba mills have been replaced by up-to-date processes and modern distilleries. In 1913 the output of proof alcohol from the distilleries amounted to about 2,250,000 gallons, the greater part of which was used for beverages. In 1925 production had risen to 4,000,000 gallons, of which some 250,000 gallons were denatured, 800,000 gallons were used for motor fuel and 600,000 gallons exported. In 1913 half the alcohol was still made from the nipa and coco-nut saps, but in 1925 nearly the whole of it was manufactured from molasses.

These palm saps form an excellent raw material, as they fermented readily in ten or twelve hours, and produced a good grade of crude alcohol, but the labour costs of collection were high. The production of denatured alcohol is on the increase, and in 1925 accounted for 21 per cent. of the entire output. In 1922 the Foster formula for the manufacture of motor fuel was introduced, and the production of motor fuel since that date has been considerable. Although there are some 80 registered stills in the country, the greater part of the output is produced by about half a dozen companies. The internal revenue laws governing production and sale are the same as those of the U.S.A. A special denaturing formula for fuel alcohol is 100 parts ethyl alcohol, 2 parts methyl alcohol and 10 parts sulphuric ether (sp. gr. ·73). This is sold under the trade name Gasco, and is said to be very satisfactory. At present there is no utilisation of waste material, but research in the direction of obtaining by-products is proceeding, and will further cheapen the alcohol.

The Blending of Coal

Its Relation to Carbonisation

COAL blending was the subject of a paper read before the annual meeting of the Iron and Steel Institute, in London, on Friday, June 4, by Mr. D. BROWNLIE. The paper constituted a review of general principles as applied to high and low temperature carbonisation.

The matter of coal blending was of interest to the iron and steel industries for two main reasons: first, the improvement of net efficiency in the production of metallurgical coke, and, secondly, because it would be impossible to carry on the industry much longer in Great Britain with the present wasteful use of coal, and the adoption of more efficient methods was becoming a national necessity. Consequently, the problem of blending swelling bituminous coals with non-swelling bituminous coals, anthracites and anthracitic coals, high temperature carbonisation coke, low temperature carbonisation fuels, oxidised coals and various constituents of coal was a matter which should be studied more actively in this country than it had been hitherto. In this matter the British coke oven industry lagged behind both the United States and the Continent. In America, coal blending was almost universal, the plants as a rule being situated at the steel works. The coal was brought from many different districts and generally stored in different bunkers and bins, whence it was taken to the mixing chambers by means of continuous belt conveyors, or the correct number of car loads were used for a large mix, so as always to keep the correct blend, two of the essential factors in successful blending being accuracy and intimate mixing.

The same applied more or less to Germany, Belgium and France, a good example being the methods now adopted in the Saar district. There were, of course, a number of British plants in which modern blending was being carried out, but the fact remained that in Great Britain adequate attention had not been given to this subject. Another important point was the fact that British coking plants were small and scattered, so that the resulting bulk supplies of coke were not uniform in quality. A much more efficient national policy would be to divide the colliery districts into areas according to circumstances, have a few very large modern coking plants, blend all the coal received from many different collieries, and produce a more uniform quality of coke, which probably also would allow the use of about 25 per cent. of small non-coking coal, at present a waste product.

Low Temperature Carbonisation

As regards low temperature carbonisation, Great Britain was peculiarly well situated for scientific methods of fuel utilisation, possessing a large proportion of rich bituminous coal which would give a high yield of by-products, with the added advantage of relatively short railway journeys in comparison with other countries, especially the United States. Again, the subject was of direct interest to the iron and steel industries on account of the improvements rendered possible in gas producer practice, as found by German practice. The low volatile fuels obtained were, in general, very suitable for this purpose, giving less trouble than the bituminous coals, whilst there was much to be said for combined low temperature carbonisation and gasification in the same setting. The latest developments in the treatment of raw coal, according to a number of different processes, seemed to be tending towards the production of a smokeless fuel that possessed extremely reactive chemical properties and was therefore of particular value for gas producers. In fact, the stage might shortly be reached when it would be the best policy in many cases to subject a great part of the coal to low temperature carbonisation for the specific purpose of power generation by means of gas engines and to obtain enriched producer gas from the residual fuels, with cracking or hydrogenation of the greater part of the tar oils to light fractions, in preference to using internal combustion heavy engine oil engines.

The adoption of suitable carbonisation processes, with the aid of blending, would also be of great value in enabling coke-oven installations to be usefully employed for turning out smokeless free burning fuel for various markets in slack periods, since, with the present general methods, a large amount of valuable plant was always liable to be standing idle as the trade fluctuated. Further, low temperature carbonisation was becoming increasingly important for the production on the spot of a fuel for blending with any strongly swelling coal. For instance, in the Saar, a proportion of the available coals was submitted to low temperature carbonisation, and the residual smokeless fuel, after the separation of the by-products, was blended in with the main bulk to give a dense coke, thus eliminating the cost of carriage and dependence on other areas for blending material.

Chemical Methods in Blending

Mr. BROWNLIE then reviewed the general position, giving references to all the important work that has been carried out and indicating the results obtained. In a special reference to chemical methods in blending, the paper pointed out that the term was used for want of a better, but it referred to the blending of coal or any other carbonaceous material with fuel products which had first been treated chemically. Chemical compounds might also be blended with the fuels so as to effect the carbonisation, and it was rather surprising that this general line of research had not attracted more attention. In this connection reference was made to the Wallace process of carbonisation in the United States, to the Fuelite process of Walter W. Strafford, of London, in which definite chemical compounds, such as barium carbonate, were added to a fuel blend. Jolly and Wheeler had also done work in this direction. The principle was essentially to add to the coking coal in the metallurgical coke-oven process some material which at temperatures of 752° to 1112° F.—400° to 600° C.—would give off a high proportion of hydrogen, carbon monoxide, or other reducing gas, at the same time leaving an inert residue that would not affect the quality of the coke. The idea was that these reducing gases reduced the amount of sulphur in the final coke, and generally the material used was anthracite or semi-anthracite coal, which, on high temperature carbonisation, gave off a considerable proportion of hydrogen in the gases.

The paper concluded with some very brief notes of a number of typical low temperature carbonisation processes of special interest to the iron and steel industries, and in which blending in general played a part.

Discussion

Dr. R. LESSING said this question in this country resolved itself into the geographical situation of the materials to be blended and whether the cost of transport would justify itself by the results obtained. Moreover, the erection of large central plants would require considerable thought, especially as the exporter of coal would hardly stand the scientific tests which would have to be applied to blended coals. It was not a question of just mixing so many tons of one fuel with so many tons of another, but a question of so blending that uniform results were obtained. Therefore, it would be necessary for such plants as those advocated to be erected by co-operation between the collieries and coke ovens. The railway and dock companies would also have to come in to provide reasonable freight facilities. Orders were being lost to this country and foreign blended coals were being used instead because it was possible to obtain from them absolutely definite results. This was rendered possible in Germany by the manner in which the selling syndicate in the Ruhr could direct coals from any centre to other centres for blending purposes, a process which also developed the technical side of the collieries, as it relieved the colliery manager from the sales side.

Professor HENRY LOUIS said that whilst he did not wish to discourage study of this question, care should be taken to ascertain that the blended coal really did meet the conditions. He recalled a case some years ago in which, after a beautiful looking coke had been obtained, the coking portion burned out freely in the blast furnace and choked the furnace completely. Again, we must remember that the Ruhr was practically one coalfield whereas we had many coalfields in this country, and he could not conceive the same selling organisation serving the export trade of Northumberland and the inland trade of Nottinghamshire.

Mr. EDGAR C. EVANS spoke of the advantages of blended fuels for producer gas purposes and said that it was on the carbonisation side that there was the greatest field for blended fuels. At the same time we should have to ascertain the peculiarities of every particular coal before any definite scheme could be laid down for dealing with the matter. That had

already been done in the Saar district where there were beautiful plants for blending coals. Unfortunately most of our existing coke oven plants were not laid out for blending, and there would have to be considerable alterations in the bunker accommodation and so on. The extra expense involved was considerable, but there was the advantage of a better coke.

Mr. H. M. RIDGE said that if and when low temperature carbonisation was made a commercial proposition, then we should find a solution of some of our troubles and a reduction in the price of metallurgical coke. Coal blending had been carried out in Germany to his own personal knowledge 30 years ago, hand mixing being employed with extremely satisfactory results.

Cleaning and Fine Grinding

Mr. A. HUTCHINSON expressed the view that attempts should be made to improve the metallurgical coke now obtained by paying attention to the efficient cleaning of the coal and also fine grinding, following this up with blending if necessary. American and Continental methods would not necessarily provide a solution of the problem here.

Mr. F. W. HARBORD said it was little use speaking of the possibilities of the low temperature carbonisation process, seeing that not one was at present working as a commercial proposition. At any rate, he would like Mr. Brownlie to tell him of one.

Mr. T. P. COLCLOUGH disagreed with the view that this country is behind other countries as regards coal blending and pointed out that it had been done here since the days of our grandfathers. Whilst improved results could be obtained when the blending was accurately carried out, as a user he suspected that the seller would, under the name of blended coal, get rid of material which the buyer would not look at separately, and at a good price. As to the formation of a committee to discuss the matter, at the present time the Fuel Research Board was carrying out an exhaustive investigation of all the coals in the country, and we ought to wait for that to be completed before taking any other action.

Society of Public Analysts

AN additional ordinary meeting of the Society of Public Analysts was held at the Chemical Society's Rooms, Burlington House, London, on Wednesday, June 2, the President (Mr. E. Richards Bolton) being in the chair.

Certificates were read for the first time in favour of Mr. Stafford Aston, F.I.C., and for the second time in favour of Messrs. Francis Harrold Banfield, M.Sc., Ph.D., A.I.C., and Albert Lester Williams, A.I.C.

The following were elected Members:—Messrs. Arthur Barraclough, B.Sc., A.I.C., George Gordon Elkington, Kenneth Massy Griffin, M.Sc., A.I.C., Herbert Firth, A.I.C., and Thomas Pickerill, B.Sc.

A paper was read by Mr. A. Lucas, F.I.C., on "Problems in connection with Ancient Egyptian Materials," which was followed by discussion. The author dealt with the more important materials discovered in Egyptian exploration. The nature of the patina on prehistoric flint implements and its probable mode of formation were described. The composition of faience and the problem of how its body materials were held together, the nature of ancient Egyptian glass and its pigments, and problems connected with pottery were then discussed. Analyses of metal objects and examples of their use in discovering the probable origin of the different metals were given. Other problems discussed were those connected with the identification of oils and fats, with the resins used for embalming mummies, the effect of burial on human hair, textile fabrics and their decay, and the examination of stone.

American Dye Imports in April

IMPORTS of coal-tar dyestuffs during April totalled 437,526 lb., valued at $401,606, against imports for April, 1925, of 451,005 lbs., valued at $426,141. Imports for the first four months of 1926 totalled 1,549,816 lb., valued at $1,498,770; against 1,756 lbs., valued at $1,639,286 for first four months of 1925. The percentages of dyes shipped by various countries were as follows: Germany, 51·5; Switzerland, 38; France, 2; England, 2; Belgium, 3·5; Canada, 1; and Italy, 2.

Opening of Bouverie House

Benn Brothers' Staff Visit to Oxford

To celebrate the opening of Bouverie House, the new headquarters of Benn Brothers, Ltd., and its associated companies, the staff to the number of about 160, by invitation of the directors, paid a visit to Oxford on Saturday, travelling by charabanc. Among those present were Sir Ernest and Lady Benn, Miss Betty Benn and Mr. John Benn, Mr. H. P. Shapland, Mr. C. E. Hughes, Mr. H. B. Crole-Rees, Mr. E. E. Starke, Mr. A. R. Pain and Mrs. Pain, and others.

In proposing the toast of the firm during luncheon Mr. F. E. HAMER said that Bouverie House was not only the outcome of past success but was literally a concrete proof of present resources and above all an expression of confidence in the future. Capacious as it now seemed, it was their hope that some day, like all the previous premises of the firm, it would prove too small for the expanding activities within it. It was a striking addition to the architecture of Fleet Street, and inside its quiet dignity and comfort were as admirable as its fine exterior. It was sometimes a problem with expanding firms how to assimilate the new interests initiated from within or acquired from outside so as to preserve a continuous identity, but to-day in all the associated branches of the company there was a true collective spirit of unity and co-operation for the common welfare, and that would be further fostered now all the firm's activities would be under one roof. They had recently welcomed into the business the first representative of the third generation of Benn Brothers, and there were others to follow. They recognised in their Chairman the real centre of the business, and their hope was that not only would he long be spared as "chief," but that the large scale on which, as Bouverie House indicated, he had planned for the future would be completely justified.

In responding to the toast Sir ERNEST BENN said there were only two things he wanted to say about Bouverie House. They were sometimes inclined to forget in connection with business matters that they spent the bulk of their business lives in business premises. They were all looking forward to spending the greater part of the time that was left to them in Bouverie House. That had been the thought uppermost in their minds in planning the building, and they were trying to make life inside Bouverie House as convenient and happy and agreeable as possible. There was something else about it that pleased him very much. He was bold enough to hope that he might go down in history as the man who put the trade paper in its proper place. The world was built upon the Empire and the Empire upon British trade. The trade Press for too long had existed in back streets and side ways, and had allowed those who smeared paper with divorce proceedings and similar matters to assume an importance that properly belonged to others. Now they had Bouverie House in the very middle of Fleet Street and the world of the Press, standing on the top of a hill, looking down upon those fancy periodicals which were of minor importance when compared with the trade organs they published every week. This was not by any means a family business; it was not a business in which could be provided fat jobs for the persons they fancied; it needed the manufacture and distribution of brains, and they did not come from any one family. While they had done great things in the past, that position could only be maintained and greater things could only be done in the future if, from the bottom upwards, they produced better and better brains. And so, while the business bore the name of the family to which he belonged, it was really an organisation to oil the machinery of the country's trade and to render service to the country's traders.

A Prolonged Patent Action

AFTER a hearing which began in March last year, Mr. Justice Eve on Tuesday reserved judgment in the case of Courtaulds, Ltd., against the Alsa Société Anonyme, a Swiss company, the owners of two patents for the manufacture of artificial silk. Courtaulds' claim is for the revocation of the patents, on the ground that the inventions to which they related were not novel and therefore that the patents were invalid. The hearing of the case has occupied 68 days, and the record of evidence extends to over 3,000 pages. The witnesses have included many chemical and other experts. It is said that the costs of the case will average about £1,000 a day.

From Week to Week

MR. AND MRS. ROBERT MOND have returned to 9, Cavendish Square, London, from abroad.

PROFESSOR R. WILLSTATTER, OF MUNICH, has been elected a foreign member of the National Academy of Science, Washington, and of the Dutch Academy of Science.

SIR JESSE BOOT, who founded the business of Boots Pure Drug Co., Ltd., 43 years ago, has retired from the chairmanship and the board of directors, and has been succeeded as chairman by his son, Mr. J. C. Boot.

THE GERMAN AND FRENCH dyestuffs industries are, it is reported, discussing the conclusion of a trade convention, the object being to control the exchange of dyestuffs between Germany and France, and probably to regulate prices.

IT WAS ANNOUNCED at the annual meeting of Boots Pure Drug Co., Ltd., that the accommodation for research work had been considerably extended during the year, and that a new suite of laboratories for bacteriological and pharmacological work had been built and equipped.

AN ANNOUNCEMENT in a recent issue of THE CHEMICAL AGE that Messrs. Courtaulds intended to erect a new factory at Holywell Junction, near Flint, has since received confirmation. The new mill is to be entirely for yarn-spinning, and will provide employment for at least a thousand operatives as a preliminary.

ALSATIAN POTASH is in steadily increasing demand, and this has stimulated drilling outside the chartered field north-west of Mulhouse, and the results of the prospecting by the Société d'Etudes de Potasse d'Alsace in a section of about 1,600 hectares, 15 kilometres north-east of Mulhouse, have led to the formation of a company known as the Cie de Mines de Potasse d'Alsace.

THE SUM OF £500,000 paid by Egypt as an indemnity for the murder of Sir Lee Stack, the late Sirdar, is being applied to various public purposes in the Soudan, and provides for the erection of a new Chemical Research Laboratory at Khartoum, to be built opposite to the Kitchener Memorial Medical School, of the same architectural design, and a travelling railway laboratory to combat epidemics.

EXPLOITATION of some of the mineral resources on the north shore of the St. Lawrence at a point known as Riviere Romaine will result in the establishment at Levis, Quebec, shortly of a large paint manufactory at a cost, it is believed, of over a million dollars. Formerly the company shipped its ochres across the border, but the power facilities offered for exploitation there are believed to have induced it to build in Canada.

A NEW METHOD OF COMBATING MOSQUITOES has been tried at Hurstmonceaux Castle, Sussex, in order to rid the locality of the insects. A very fine almost impalpable powder was prepared from paraffin oil, phenol, brown camphor and salfrol mixed with road dust and blown over the selected area. This resulted in all the mosquitoes being destroyed. The method has been employed in other parts of the country with excellent results. It is inexpensive, as the ingredients necessary for treating an area of one square mile cost less than £5.

THAT GREECE is steadily making industrial progress is evident from the chemical, dyestuffs and soap making concerns, which have considerably increased output in recent years. "Saxolin," the Greek equivalent of aspirin, has a large sale, as have other articles in the same line. The annual production of chemical manures is about 25,000 tons; of soap, 23,000 tons; and of aniline dyes about 90 tons. Considerable progress is also being made in the cement industry. The production of pure alcohol from currants is materially increasing.

THE APPOINTMENTS made by the Committee of Award for the Commonwealth Fund Fellowships, tenable by British graduates in American universities for the two years beginning in September, 1926, includes:—Mr. I. W. M. A. Black, of St. Andrews University, to Yale University, in Physical Chemistry. Mr. W. Rule, of Armstrong College, Durham University, to Cornell University, in Physics; and Mr. C. B. Purves, of St. Andrews University, to Johns Hopkins University and the Bureau of Standards, Washington, B.C., in Organic Chemistry.

THE HOME SECRETARY intimates that he proposes to make regulations amending the Dangerous Drugs Regulations, 1921, to carry out the recommendations contained in the report of the Ministry of Health Committee on morphine and heroin addiction, published in February, 1926. Opportunity has also been taken to remove the ambiguity which existed as to the requirements of regulation 5 regarding the particulars to be inserted in prescriptions, and to include a new regulation requiring retail chemists to keep their stocks of dangerous drugs under lock and key.

ACCORDING TO THE FOURTH REPORT of the Royal Commission on Awards to inventors, dealing with the period from August, 1924, to December, 1925, £9,000 has been awarded to Mr. Bateman Scott, Mr. T. A. M. Leadbitter, Mr. A. L. K. Gilchrist, and the Holywell Standard Chemicals, Ltd., for improvements relating to valve gear for revolving cylinder internal combustion motors, and the sum of £1,000 in addition to £5,000 given by the Admiralty has been awarded to the Aktiengesellschaft fur Autogene Aluminium Schweissung for improvements in welding aluminium.

MR. H. R. HUDSON, Ph.C., of Allen and Hanburys (Africa), Ltd., recently gave a broadcasting talk from the Durban Broadcasting Station on "Medicine in the Middle Ages."

SIR ALFRED MOND, in consequence of his election as chairman of Brunner, Mond and Co., has resigned his seat on the board of directors of the British Dyestuffs Corporation.

SHEFFIELD CORPORATION CLEANSING DEPARTMENT makes about fifty tons of briquettes a day from partly consumed coal and coke and other combustible refuse collected from works and houses.

THE COUNCIL of the Iron and Steel Institute has decided to award the Bessemer Medal to Sir Hugh Bell, the veteran Tees-side ironmaster. The announcement was made by Sir Peter Rylands, the new President, at the annual meeting of the Institute in London, on Friday, June 4.

AN INTERESTING PROPERTY OF SULPHUR, *e.g.*, its capacity for preventing the spontaneous ignition of oils and oil-mixtures, is described in the German press. A small quantity (for example, 2 per cent. by weight of a varnish) is especially efficient. There is indeed observed a slight heating, but no ignition.

NEW ALLOYS which do not undergo change even at 3,000° C., and which are as hard as diamond have, according to the German journal *Die Werkzeugmaschine*, been discovered by a Berlin engineer, R. Kolb. Tools and construction metals made from these alloys are to be manufactured by electrical methods by a Swedish company in Arboga.

AT THE ANNUAL DINNER of the Pharmaceutical Society of Great Britain, Mr. Philip F. Rowsell (the president) said that their work had now led to the institution by the University of London of the degree of Bachelor of Pharmacy, and he was able to announce that Mr. Neville Chamberlain had promised to open the Society's new laboratories next Wednesday.

THE SOUTH AFRICAN CHEMICAL INSTITUTE (formerly the South African Association of Analytical Chemists) has issued (under date September, 1925) its proceedings (1924–1925) and list of members. For 1925–1926 the president is Mr. H. H. Dodds, M.Sc., A.I.C., and the honorary secretary Mr. N. Taylor, B.Sc., A.I.C. The proceedings mention, among other things, a series of interesting talks on chemistry, given by various members of the institute, which have been broadcast.

AT A GENERAL MEETING of the members of the Royal Institution on Monday Sir Arthur Keith (chairman) announced that the President had nominated Sir James Crichton-Browne, Dr. J. Mitchell Bruce, Sir Ernest Moon, Sir Edward Pollock, Sir Almroth Wright, Sir Alfred Yarrow and Sir Arthur Keith (treasurer), and Sir Robert Robertson (secretary) as vice-presidents for the ensuing year. Mr. W. H. Inskip, Mrs. James Mitchell, Dr. Boris Orelkin, Dr. H. R. Rice and Dr. J. F. Tocher were elected members.

THE UNITED STATES TARIFF COMMISSION has recently considered an application from E. I. du Pont de Nemours and Co. for an increase in the duty on imported strontium nitrate. The Commission has directed its secretary to reply that after careful consideration it is of opinion that the institution of a formal investigation is not justified at the present time by the facts disclosed by the Commission's inquiry. It will be prepared, however, to give further attention to the matter at any time, if the applicants bring forward additional information, and if developments occur in the situation.

AT THE FUNERAL of the late Mr. H. S. Willcocks on June 4, wreaths were sent by the chemical section of the Manchester Chamber of Commerce, the British Chemical and Dyestuffs Traders' Association, and other trading and social organisations. Mr. Willcocks who was the chief of H. S. Willcocks and Co., Ltd., of Manchester, which he founded in 1893, was highly respected throughout the chemical trade. He was interested in Empire cotton growing and it was on his return from a cotton farm in South Africa that he died suddenly in Cape Town. Mr. A. G. Willcocks succeeds him as chief of the Manchester business.

THE UNITED STATES appraiser of merchandise at New York has been notified by the Treasury Department that it sees no reason for the issuance of an anti-dumping order against certain Berlin firms exporting sulphate of alumina to the United States. The reason given is that it is evident that the German and American values as reported by investigators are in accord. Reports to the customs attaché at Berlin show that the exporters' sales price of the seventeen-eighteenths per cent. sulphate of alumina shipped to the United States is not less than the foreign value of the merchandise for consumption in Germany.

Obituary

MR. H. S. WILLCOCKS, head of H. S. Willcocks and Co., Ltd., of Manchester, chemical manufacturers, and a member of the British Chemical and Dyestuff Traders' Association.

THE ABBE TOULEIGNE, at Auxerre, aged 56, as the result of injuries due to X-ray experiments. In 1923 he was awarded the Carnegie Foundation silver medal for his work. During the War he swallowed grains of lead and X-rayed himself in order to investigate the effect of bullets in the bodies of the wounded. This work cost him terrible suffering, and finally led to his death.

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Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each

Abstracts of Complete Specifications

251,019. NON-DELIQUESCENT BODY FROM SULPHITE CELLULOSE LIQUOR, MANUFACTURE OF. A. G. Bloxam, London. From Akt.-Ges. für Anilin Fabrikation, Berlin. Application date, January 22, 1925.

The deliquescent nature of the product obtained by evaporating sulphite cellulose liquor to dryness is due to the presence of sugars in addition to the salts of lignin sulphonic acids. These substances may be removed by adding alcohol, which precipitates the lignin sulphonates in a non-deliquescent freely soluble form. In another method, the liquor may be treated before evaporation with oxidising agents or boiling with acids or dilute alkalis whereby the deliquescent constituents are converted into non-deliquescent substances.

251,117. PURIFICATION OF PETROLEUM, BENZINE, AND BENZOL HYDROCARBONS, THEIR HOMOLOGUES AND THE LIKE. Ges. für Warmetechnik m.b.H. and A. Ufer, 43, Farnstrasse, Bochum, Germany. Application date, May 21, 1925.

Hydrocarbons which are liquid at ordinary temperatures are agitated with sulphuric acid, and water is then added without removing the acid. The resins are thus separated from the sulphuric acid, and are partly dissolved by the hydrocarbon or collect as an intermediate layer. The sulphuric acid is drawn off and the washed product neutralised with alkali, which takes up the resins. In a modification, an electrolyte is added to the mixture of sulphuric acid and hydrocarbon, so that the resinous matter separates out as an intermediate layer. If ammonium sulphate is used, the liquor containing sulphuric acid and ammonium sulphate can be used for producing more ammonium sulphate.

251,140. TRISAZO DYESTUFFS. O. Y. Imray, London. From Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany. Application date, June 24, 1925.

These dyestuffs are obtained by first forming a mono-azo dyestuff by coupling a diazotised amine or a substitution product, particularly a sulphonic acid, with a phenol capable of being coupled twice particularly with resorcinol, then coupling the dyestuff with a diazotised aminonaphtholsulphonic acid or a substitution product to form a disazo dyestuff, and then coupling with a diazotised amine or a substitution product to obtain a trisazo dyestuff. The dyestuffs are particularly suitable for dyeing leather, and olive-brown to reddish-brown shades can be obtained.

251,142. DISTILLING CARBONACEOUS MATERIALS. M. J. Trumble, 816, Higgins Building, Los Angeles, Cal., U.S.A. Application date, June 20, 1925.

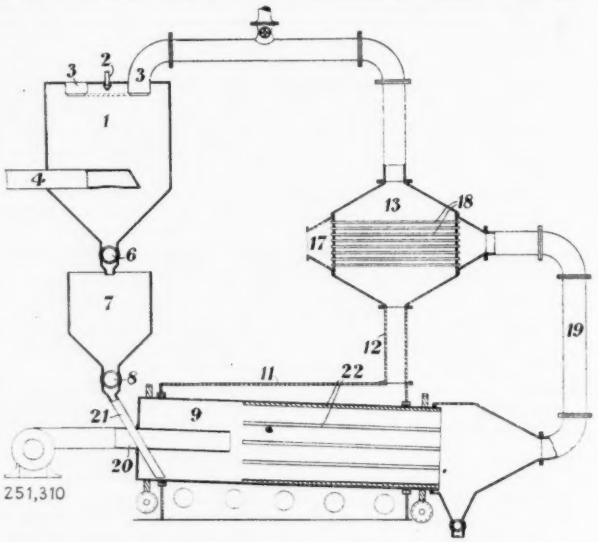
In the distillation of coal, oil shale, peat, wood, etc., by injecting superheated steam and hydrogen into it, the hydrogen is obtained by the decomposition of some of the steam with a readily oxidisable substance.

251,147. BORNYL ESTERS FROM PINENES OR MIXTURES CONTAINING PINENES FOR THE MANUFACTURE OF CAMPHOR, PROCESS FOR THE PRODUCTION OF. V. Isajev, Buckova ul, 59, Prague-Bubenec, Czecho-Slovakia. Application date, July 23, 1925.

Pinenes or mixtures containing pinenes and camphene are esterified by means of organic acids, the initial substance being dissolved in such esters as correspond to the acids used for esterification. Thus, benzoic acid is dissolved in methyl-, ethyl-, propyl-, or amyl benzoic acid esters; salicylic acid is dissolved in esters of salicylic acid; and neutral and acid esters of oxalic acid, phthalic acid, etc., are solvents for the acids. These esters completely mix with mixtures of pinenes and camphene, and the esterification is effected at ordinary pressure. Catalysts such as floridin, metal haloids, etc., may be present.

251,310. FERRIC OXIDE, PRODUCTION OF. O. S. Neill, 8, Bent Street, Sydney, Australia. Application date, October 24, 1924.

Ferric oxide is continuously produced from solutions of iron salts such as waste pickle liquor, by atomising the liquid into heated air. The solution is passed through an atomiser 2 into a chamber 1 of fireproof material, and hot air is introduced through an annular conduit 3. The air and moisture pass out through a pipe 4, and the dehydrated powder is withdrawn at intervals through a valve 6 to a hopper 7. The powder is fed through a valve 8 to a calcination furnace 9 of the



rotary type and slightly inclined. The combustion products pass from the casing 11 through a passage 12 to a recuperator 13, and thence through pipe 14 to the annular conduit 3. Air is drawn through the inlet 17 and tubes 18 of the recuperator, and then through pipe 19 into the calcination furnace. The draw off pipe 20 extends some distance into the furnace, so that the powder delivered by pipe 21 has time to reach 200° C. before being agitated by the ribs 22. The oxide obtained is of 90 per cent. purity, and may be used as a pigment or as a catalyst.

NOTE.—Abstracts of the following specifications which are now accepted, appeared in THE CHEMICAL AGE when they became open to objection under the International Convention: —232,568 (T. Goldschmidt Akt.-Ges.), relating to continuous production of gas mixtures rich in hydrocarbons, see Vol. XII, p. 641; 234,458 (Soc. Anon. des Distilleries des Deux-Sèvres), relating to continuous manufacture of esters of the fatty or aromatic series, see Vol. XIII, p. 109; 235,540 (M. Naef and Cie), relating to preparation of monocyclic ketones with more than nine ring members, see Vol. XIII, p. 176; 237,626 (Nordiske Natrolith Aktieselskabet), relating to base-exchanging substance for removing iron, manganese, calcium, and magnesium from water, see Vol. XIII, p. 359; 238,889 (Metallbank and Metallurgische Ges. Akt.-Ges.), relating to production of active carbon, see Vol. XIII, p. 453.

International Specifications not yet Accepted

248,738. HYDROCHLORIC ACID. Verein für Chemische und Metallurgische Produktion, Aussig, Czecho-Slovakia. International Convention date, March 9, 1925.

Hydrochloric acid is treated with chlorine to convert arsenic and sulphur dioxide impurities into higher oxidation compounds which are then extracted with activated carbon.

248,746. ALUMINA. A. Finkelstein, 8, Kesslerstrasse, Bernburg, Germany. International Convention date, March 3, 1925.

In the Bayer process for extracting alumina, the mother liquor at a density below 1·36 is used to dissolve more alumina at 170° C. The wash waters are evaporated to the strength of the mother liquor.

(*Continued on page 527*)

(*Continued from p.* 526)

248,759. HYDROGENATED ANTHRAQUINONE COMPOUNDS. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. (Assignees of J. D. Riedel Akt.-Ges., Britz, Berlin). International Convention date, March 3, 1925.

Anthraquinone and its derivatives are treated with hydrogen at an elevated temperature and pressure and in presence of a catalyst. In this manner, anthrone, tetrahydroanthranol, octahydroanthranol, 1 : 4-dimethyl-anthranol, 1 : 4-dimethyl-tetrahydroanthranol, 1 : 4-dimethyl-decahydro-anthracene, 2 : 3-tetramethylene-anthranol, 2 : 3 : 6 : 7-*bis*-tetramethylene-α-naphthol, tetrahydro-naphthacene, β-hydroxy-octahydroanthranol, α-amino-β-methyl-anthraquinone and other compounds can be obtained, the degree of hydrogenation depending on the quantity of hydrogen.

248,766. DYES, AND DYEING. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. (Assignees of Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany). International Convention date, March 5, 1925. Addition to 231,529.

2 : 3-oxynaphthoic arylides are coupled with the diazo compounds of 2-amino-4-aroylamino-1-aryloxybenzenes not containing a free hydroxyl group, carboxylic group, or sulphonic group, to obtain azo dyes which are of more yellowish shades than those obtained according to specification 231,529 (see THE CHEMICAL AGE, Vol. XII, p. 590). The 2-amino-4-aroylamino-1-aryloxybenzenes are obtained by condensing a 1-chlor-2-nitro-4-aroylaminobenzene with an alkali salt of a phenol, and reducing.

248,782. CONDENSATION PRODUCTS. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. (Assignees of Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany.) International Convention date, March 9, 1925.

A halogenated simple or mixed ketone or ether, or a halogenated aldehyde, or a derivative of these, is condensed with an aromatic oxy compound in the presence or absence of a condensing agent, and the product is brought into water-soluble form by sulphonation. Thus, in examples, phenol may be condensed with chloracetone, chloracetaldehyde, and chlorethylmethyl-ketone in the presence of hydrochloric acid, and with a symmetrical dichlorether in the absence of a condensing agent. The products are sulphonated.

248,791. α-AROYL-β-NAPHTHOLS AND BENZANTHRONE DERIVATIVES. I.G. Farbenindustrie Akt-Ges., Frankfurt-on-Main, Germany. (Assignees of Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany.) International Convention date, March 9, 1925.

β-naphthyl esters of aromatic acids are treated with condensing agents in the presence of a diluent to obtain α-aroyl-β-naphthols. These may be further condensed to oxybenzanthrones or dioxydibenzopyrene-quinones. Thus, naphthyl-2 : 6-dibenzoic acid ester is treated with aluminium chloride in tetrachlorethane to obtain 1 : 5-dibenzoyl-2 : 6-dioxynaphthalene. This product is treated with sodium-aluminium chloride at 140°–150° C. to obtain 1 : 6-dioxy-3 : 4 : 8 : 9-dibenzopyrene-5 : 10-quinone.

249,099. DYES. Soc. of Chemical Industry in Basle, Switzerland. International Convention date, March 10, 1925. Addition to 231,555.

The vat dyestuff described in Specification 231,555 (see THE CHEMICAL AGE, Vol. XII, p. 461) is obtained, according to an example, by boiling 1-brom-2-aminoanthraquinone-3-carboxylic acid with nitrobenzene, sodium acetate and copper chloride, and the product extracted with sodium carbonate.

249,113. ALDEHYDE-AMINE CONDENSATION PRODUCTS FOR ACCELERATING RUBBER VULCANISATION. Grasselli Chemical Co., 1300, Guardian Building, Cleveland, Ohio, U.S.A. (Assignees of I. Williams and W. B. Burnett, Mellon Institute, Pittsburg, Pa., U.S.A.) International Convention date, March 13, 1925.

Vulcanisation accelerators are obtained by the reaction of one molecular proportion of an amino body and 2–20 molecular proportions of an aldehyde under conditions in which water is eliminated. Amines such as aniline, *n*-butylamine, ethylamine, *o*-tolyl-diguanide, ethylaniline, ethylene diamine, *o*-toluidine, methylamine and diethylamine may be used, and aldehydes such as acetaldehyde, propionaldehyde, *n*-butyraldehyde, heptaldehyde, crotonaldehyde, citral, acetaldol, and cinnamic aldehyde. Acids may be present. A large number of examples of these products, and the properties of the rubber obtained by their use, are given.

249,101. FORMALDEHYDE-UREA CONDENSATION PRODUCTS. Soc. of Chemical Industry in Basle, Switzerland. International Convention date, March 10, 1925.

A water-soluble condensation product is first obtained from one molecular proportion of urea and at least two molecular proportions of formaldehyde, and then mixed with more urea till the proportion is greater than 1 : 2, and with a small amount of sulphuric or phosphoric acid and ammonium chloride or sulphate. The mixture is concentrated and hardened.

249,147. DYES. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. (Assignees of Farbwerke vorm. Meister, Lucius, and Brüning, Hoechst-on-Main, Germany.) International Convention date, March 14, 1925.

1 : 5-dibenzoyl-2 : 6-dioxynaphthalene, which is described in specification 248,791 (see abstract in previous column) or its derivatives, particularly those substituted in the benzoyl residues, may be treated with a reagent capable of exchanging hydroxyl for halogen and closing the dibenzopyrenequinone ring, *e.g.*, halides of phosphorus. The products dye cotton in yellow shades and examples are given.

249,155-6. HYDROGENISING COAL, OILS, ETC. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 14, 1925.

249,155. This is an addition to 247,217 (see THE CHEMICAL AGE, Vol. XIV, p. 386). Coal, tar, mineral oil, etc., is treated with reducing gases at high temperatures and pressures in apparatus made of a metal not acted on by carbon monoxide, *e.g.*, copper, silver, aluminium, chromium, manganese, vanadium, uranium, etc. Oils are obtained.

249,156. The tar-like product obtained by hydrogenation is again hydrogenated. Thus, air-dried lignite is treated with hydrogen at 450° C. and 200 atmospheres pressure in the presence of metal oxides not easily reduced. The products are passed at the same pressure over calcium carbonate at 500°-550° C. and then into a condenser.

249,160. DYES. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. (Assignees of Akt.-Ges. für Anilin Fabrikation, Treptow, Berlin.) International Convention date, March 14, 1925.

A tetra-alkyl-4 : 4^1-diamino-benzophenone is condensed with an arylated or arylated and alkylated ethylenediamine having no substituent in the aryl residue in *p*-position to the nitrogen to obtain violet dyestuffs of the triarylmethane series. A basic dyestuff product may be sulphonated to convert it into an acid wool dyestuff. Examples are given.

249,465. LEAD SALTS. Consortium für Nassmetallurgie, Oker, Harz, Germany. International Convention date, March 20, 1925. Addition to 240,401 (see THE CHEMICAL AGE, Vol. XIII, p. 581).

Lead-bearing materials are treated with chloride solutions and the solution treated with a small amount of an alkaline substance such as lime, so that about 1 per cent. of the lead is precipitated. This precipitates the iron more rapidly than the process of 240,401. The solution is then treated with a small proportion of a soluble sulphide to precipitate about 0·5 per cent. of the lead, and also the noble metals, bismuth, and arsenic.

249,474. CHLORINE AND ALKALI SULPHATE. Zellstofffabrik Waldhof and E. Schmidt, 136, Oppauerstrasse Waldhof, Mannheim, Germany. International Convention date, March 21, 1925.

Alkali chloride is treated with a mixture of sulphur trioxide and air at such a temperature that the chloride does not melt (300°-600° C.) and sulphur dioxide is not evolved. The gases may be obtained from contact sulphuric acid furnaces, and may contain 7 per cent. of sulphur trioxide. The products are chlorine and alkali sulphate.

LATEST NOTIFICATIONS.

251,942. Process for obtaining sulphur from alkaline earth sulphates. Salzwerk Heilbronn Akt.-Ges.. Lichtberger, T., and Flor, K. May 8, 1925.

251,961. Manufacture of waterproofing-composition. Naugatuck Chemical Co. May 7, 1925.

251,968. Manufacture of Coerulein sulphonic acids. I. G. Farbenindustrie Akt.-Ges. May 7, 1925.

251,969. Manufacture and production of motor fuel. I. G. Farbenindustrie Akt.-Ges. May 8, 1925.
251,974. Method of purification and isolation of anthraquinone beta sulphonic acid. Newport Co. May 9, 1925.
251,982. Carbonaceous material and process for making same. Roessler and Hasslacher Chemical Co. May 9, 1925.
251,996. Manufacture of vat-dyestuffs. I. G. Farbenindustrie Akt.-Ges. May 6, 1925.
251,997. Manufacture of compounds containing carbocyclic or heterocyclic rings. I. G. Farbenindustrie Akt.-Ges. May 5, 1925.
252,018. Manufacture and production of liquid fuels. I. G. Farbenindustrie Akt.-Ges. May 8, 1925.
252,019. Manufacture and production of liquid fuels. I. G. Farbenindustrie Akt.-Ges. May 8, 1925.
252,029. Manufacture of condensation products of the anthraquinone series. I. G. Farbenindustrie Akt.-Ges. May 11, 1925.
252,328. Process for treating cellulose derivatives. I. G. Farbenindustrie Akt.-Ges. May 20, 1925.
252,361. Contact masses for the hydrogenising of the oxides of carbon. Patart, G. May 25, 1925.
252,362. Plants for carrying out synthesising operations upon gases at high temperature and pressure. Patart, G. L. E. May 25, 1925.
252,367. Process of utilising molten crude phosphates. I. G. Farbenindustrie Akt.-Ges. May 23, 1925.
252,382. Process of preparing dry non-explosive nitrocellulose. I. G. Farbenindustrie Akt.-Ges. May 20, 1925.
252,390. Manufacture of dyestuffs. I. G. Farbenindustrie Akt.-Ges. May 22, 1925.
252,392. Cleaning, wetting, emulsifying and the like. I. G. Farbenindustrie Akt.-Ges. May 22, 1925.
252,399. Process for the manufacture of aluminium oxide. Aktieselskapet Norsk Aluminium Co. May 23, 1925.

Specifications Accepted with Date of Application

226,518. Sulphuric acid by the contact process, Manufacture of. General Chemical Co. December 21, 1923.
228,879. Recovery of adsorbed substances from adsorption media. Metallbank und Metallurgische Ges. Akt.-Ges. February 6, 1924.
229,283. Purifying oils and fats by means of soda or similarly acting carbonates. Metallbank und Metallurgische Ges. Akt.-Ges. and W. Gensecke. February 15, 1924.
231,190. Cracking mineral and other hydrocarbon oils. M. Melamid. March 22, 1924.
231,529. Azo dyestuffs, Manufacture of. Farbwerke vorm. Meister, Lucius, and Brüning. March 29, 1924.
235,556. Sulphur dyestuffs, Manufacture of. Akt.-Ges. für Anilin Fabrikation. June 14, 1924.
241,572. Dyestuffs, Manufacture of. Soc. of Chemical Industry in Basle. October 16, 1924.
243,677. Sodium bicarbonate and sal-ammoniac, Process for the production of. Ges. für Kohlentechnik. November 26, 1924. Addition to 229,640.
251,313. Dyestuffs and intermediates, Manufacture of. R. F. Thomson, J. Thomas, and Scottish Dyes, Ltd. October 21, 1924.
251,321. Thioindigo derivatives, Manufacture of. H. Dodd, W. C. Sprent, and United Alkali Co., Ltd. December 29, 1924.
251,404. Cracking oils, Method and apparatus for. T. E. Robertson. (*Power Specialty Co.*) March 24, 1925.
251,449. Oxidised leaden powder, Manufacture of. C. A. Hall. May 26, 1925.
251,495. Recovery of hydrochloric acid from ferrous chloride solutions, Process for. R. Ensoll. August 6, 1925.
251,502. Drying lithophone, Method of. Gewerkschaft Sachtleben. July 30, 1925.
251,511. Basic dyestuffs of the malachite green series, Manufacture of. A. G. Bloxam. (*Chemische Fabrik Griesheim-Elektron.*) September 23, 1925.
251,527. Treatment of ores for the recovery of titanium, tungsten, and tantalum. Process for. A. W. Gregory. October 20, 1925.
251,578. Iodised pyridine derivatives, Process for the production of. A. Binz and C. Rath. October 30, 1924.
229,679. Regulating evaporating, concentrating, and distilling apparatus. Soc. des Condenseurs Delas. February 23, 1924.
231,459. Treatment of heavy hydrocarbons to obtain a combustible gas and liquid products analogous to petroleum or naphtha. Benzonaftene. March 26, 1924.
235,584. Halogenated alcohols, Manufacture of. Farbenfabriken vorm. F. Bayer and Co. June 12, 1924.
237,875. Fertilisers, Process for obtaining. Rhenania Verein Chemischer Fabriken Akt.-Ges. August 1, 1924.
240,834. Alumina, Process for the production of. Chemische Fabrik Griesheim-Elektron. October 2, 1924. Addition to 205,563.
241,184. Iron-free alumina, Process for the production of. Chemische Fabrik Griesheim Elektron. October 13, 1924.
246,147. Uranium, Manufacture of. Westinghouse Lamp Co., January 13, 1925.
251,491. Dyes and dyeing. J. Morton, J. I. M. Jones, B. Wyland, J. E. G. Harris, and Morton Sundour Fabrics, Ltd. November 1, 1924.
251,678. Alcohols and acetone, Manufacture of. E. H. Strange. January 10, 1925.
251,724. Heat treatment of materials for distilling, drying, or carbonising them. Thermal Industrial and Chemical (T.I.C.) Research Co., Ltd., and D. Rider. February 27, 1925.
251,736. Separating antimony and lead, Process of. E. C. R. Marks. (*American Smelting and Refining Co.*) March 17, 1925.
251,755. Purification of Coal gas. T. V. Miles, G. W. Allott and Newton, Chambers and Co., Ltd. April 17, 1925.
251,866. Colours capable of being fixed by heat, Process for the manufacture of. O. van Cuyck. May 8, 1925.
251,890. Halogenated alcohols, Manufacture of. Farbenfabriken vorm. F. Bayer and Co. and H. Meerwein. June 11, 1925. Addition to 235,584.

Applications for Patents

Allgemeine Ges. für Chemische Industrie. Process for refining mineral oils. 12,461. May 14. (Germany, March 5.)
Allgemeine Ges. für Chemische Industrie. Apparatus for expelling sulphurous acid from mixtures of sulphurous acid and oil. 12,462. May 14. (Germany, April 12.)
British Alizarine Co., Ltd., Dawson, W. H., Soutar, C. W., and Wood, R. J. Dyeing artificial silk, etc. 13,403. May 27.
British Dyestuffs Corporation, Ltd., Dyson, G. M., Mason, F. A., and Renshaw, A. Manufacture of carbazides, etc., of the naphthalene series. 13,236. May 25.
British Dyestuffs Corporation, Ltd., Everatt, R. W., and Rodd, E. H. Manufacture of dinitrotoluene. 12,259. May 12.
British Dyestuffs Corporation, Ltd. Pyrazolone dyestuffs. 12,260. May 12.
Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs, etc. 12,282, 12,283. May 12.
Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of anthraquinone dyestuffs. 12,381. May 13.
Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Purification of hydrocarbons. 13,348. May 26.
Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of chrome alums. 13,584. May 28.
Clark, T. W., and Pearson and Co., Ltd., E. T. Manufacture of aryl sulphonyl amido phenols, etc. 12,070. May 10.
Dreyfus, H. Manufacture of an aliphatic compound. 13,302. May 26.
Everest, A. E., and Leitch and Co., Ltd., J. W. Dyeing acetyl cellulose. 12,173. May 11.
Everett, P. N. Devices for filtering, etc., liquids. 12,371. May 13.
Feuerstein, F. Simultaneous production of heavy metals and calcium chloride. 12,470. May 14.
Hadfield, Sir R. A. Manganese steel. 12,144. May 11.
Haythornthwaite, A. Manufacture of alkaloid compounds, etc. 13,654. May 29.
Heide, H. C., and Products Protection Corporation. Method for moulding phenolic condensation products. 13,599. May 28.
Heide, H. C., Treating mouldings of phenolic condensation products. 13,600. May 28.
Henry, I. W. Manufacture of benzol, etc. 13,525. May 28.
I. G. Farbenindustrie Akt.-Ges., and Mond A. Production of anhydrous magnesium chloride. 12,390. May 13.
I. G. Farbenindustrie Akt.-Ges. Manufacture of condensation products of the anthraquinone series. 12,143. May 11. (Germany, May 11, 1925.)
I. G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs. 12,284. May 12. (Germany, May 12, 1925.)
I. G. Farbenindustrie Akt.-Ges. Manufacture of magnesium chromates. 12,252. May 12. (Germany, June 22, 1925.)
I. G. Farbenindustrie Akt.-Ges. Manufacture of alkyl cellulose derivatives. 12,253. May 12. (Germany, May 15, 1925.)
I. G. Farbenindustrie Akt.-Ges. Manufacture of vat-dyestuffs. 13,223. May 25. (Germany, November 7, 1925.)
Niccoli, E. Process for producing pure potassium salt. 12,372. May 13.
Patart, G. Contact masses for hydrogenising oxides of carbon. 12,293. May 12. (France, May 25, 1925.)
Patart, G. L. E. Gas-synthesising plants. 12,294. May 12. (France, May 25, 1925.)
Scottish Dyes, Ltd., Smith, W., and Thomas, J. Anthraquinone derivatives. 13,357. May 26.
Silesia Verein Chemische Fabriken. Production of symmetrical diarylguanidines. 13,576. May 28. (Germany, September 23, 1925.)
Smith, H. G., and Synthetic Ammonia and Nitrates, Ltd. Production of methanol, etc. 12,228. May 12.
Stephens, A. J., and Zahn and Co. Bau Chemischer Fabriken Ges. Manufacture of carbon disulphide. 12,264. May 12.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.

ACID BORIC, COMMERCIAL.—Crystal, £37 per ton, Powder, £39 per ton.

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.

ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.

ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.

AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.

BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.

BLEACHING POWDER.—Spot, £9 10s. d/d; Contract, £8 10s. d/d, 4-ton lots.

BORAX, COMMERCIAL.—Crystal, £23 per ton. Powder, £24 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)

CALCIUM CHLORATE (SOLID).—£5 12s. 6d. to £5 17s. 6d. per ton d/d, carr. paid.

COPPER SULPHATE.—£25 to £25 10s. per ton.

METHYLATED SPIRIT 64 O.P.—Industrial, 2s. 5d. to 2s. 11d. per gall. Mineralised, 3s. 8d. to 4s. per gall., in each case according to quantity.

NICKEL SULPHATE.—£38 per ton d/d.

NICKEL AMMONIA SULPHATE.—£38 per ton d/d.

POTASH CAUSTIC.—£30 to £33 per ton.

POTASSIUM BICHROMATE.—4½d. per lb.

POTASSIUM CHLORATE.—3⅞d. per lb., ex wharf, London, in cwt. kegs.

SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.

SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.

SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.

SODA CRYSTALS.—£5 to £5 5s. per ton ex railway depots or ports.

SODIUM ACETATE 97/98%.—£21 per ton.

SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.

SODIUM BICHROMATE.—3½d. per lb.

SODIUM BISULPHITE POWDER 60/62%.—£17 per ton for home market, 1-cwt. iron drums included.

SODIUM CHLORATE.—3d. per lb.

SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.

SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.

SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.

SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.

SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.

SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—4⅞d. to 5d. per lb. Crude 60's, 1s. 5d. to 1s. 6d.

ACID CRESYLIC 97/99.—1s. 8d. to 1s. 9d. per gall. Pale, 95%, 1s. 6d. to 1s. 7d. per gall. Dark, 1s. 3d. to 1s. 4d. per gall. Steady.

ANTHRACENE.—A quality, 3d. to 4d. per unit.

ANTHRACENE OIL, STRAINED.—7d. to 8d. per gall. Unstrained, 6½d. to 7½d. per gall.

BENZOL.—Crude 65's, 1s. 2½d. to 1s. 3½d. per gall., ex works in tank wagons. Standard Motor, 1s. 8½d. to 1s. 11d. per gall., ex works in tank wagons. Pure, 1s. 10d. to 2s. 4d. per gall., ex works in tank wagons.

TOLUOL.—90%, 1s. 9½d. to 2s. per gall. Pure, 2s. to 2s. 4d. per gall.

XYLOL.—2s. to 2s. 6d. per gall. Pure, 3s. 3d. per gall.

CREOSOTE.—Cresylic, 20/24%, 9d. to 10d. per gall. Standard specification, middle oil, heavy, 6½d. to 7d. per gall.

NAPHTHA.—Crude, 9d. to 1s. per gall. according to quality. Solvent 90/160, 1s. 5d. to 2s. per gall. Solvent 90/190, 1s. to 1s. 4d. per gall.

NAPHTHALENE CRUDE.—Drained Creosote Salts, £3 10s. to £5 per ton. Whizzed or hot pressed, £5 10s. to £7 10s.

NAPHTHALENE.—Crystals and Flaked, £11 10s. to £13 per ton, according to districts.

PITCH.—Medium soft, 67s. 6d. to 74s. per ton, according to district. Nominal.

PYRIDINE.—90/140, 17s. to 19s. per gall. Heavy, 7s. to 10s. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated.

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.

ACID ANTHRANILIC.—6s. 6d. per lb. 100%.

ACID BENZOIC.—1s. 9d. per lb.

ACID GAMMA.—8s. per lb.

ACID H.—3s. 3d. per lb. 100% basis d/d.

ACID NAPHTHIONIC.—2s. 2d. per lb. 100% basis d/d.

ACID NEVILLE AND WINTHER.—4s. 9d. per lb. 100% basis d/d.

ACID SULPHANILIC.—9d. per lb. 100% basis d/d.

ANILINE OIL.—7d. per lb. naked at works.

ANILINE SALTS.—7d. to 7½d. per lb. naked at works.

BENZALDEHYDE.—2s. 1d. per lb.

BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.

o-CRESOL 29/31° C.—3d. to 3½d. per lb.

m-CRESOL 98/100%.—2s. 1d. to 2s. 3d. per lb.

p-CRESOL 32/34° C.—2s. 1d. to 2s. 3d. per lb.

DICHLORANILINE.—2s. 3d. per lb.

DIMETHYLANILINE.—1s. 11d. to 2s. per lb. d/d. Drums extra.

DINITROBENZENE.—9d. per lb. naked at works.

DINITROCHLORBENZENE.—£84 per ton d/d.

DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.

DIPHENYLANILINE.—2s. 10d. per lb. d/d.

a-NAPHTHOL.—2s. per lb. d/d.

B-NAPHTHOL.—11d. to 1s. per lb. d/d.

a-NAPHTHYLAMINE.—1s. 3d. per lb. d/d.

B-NAPHTHYLAMINE.—3s. 2d. per lb. d/d.

o-NITRANILINE.—5s. 9d. per lb.

m-NITRANILINE.—3s. 3d. per lb. d/d.

p-NITRANILINE.—1s. 9d. per lb. d/d.

NITROBENZENE.—5d. per lb. naked at works.

NITRONAPHTHALENE.—10d. per lb. d/d.

R. SALT.—2s. 4d. per lb. 100% basis d/d.

SODIUM NAPHTHIONATE.—1s. 9d. per lb. 100% basis d/d.

o-TOLUIDINE.—8d. per lb. naked at works.

p-TOLUIDINE.—2s. 2d. per lb. naked at works.

m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £8. Grey, £17 10s. per ton. Liquor, 9d. per gall. 32° Tw.

CHARCOAL.—£7 to £9 per ton, according to grade and locality.

IRON LIQUOR.—1s. 6d. per gall. 32° Tw. 1s. 2d. per gall., 24° Tw.

RED LIQUOR.—9½d. to 1s. per gall.

WOOD CREOSOTE.—2s. 9d. per gall. Unrefined.

WOOD NAPHTHA, MISCIBLE.—3s. 6d. per gall. 60% O.P. Solvent, 3s. 6d. per gall. 40% O.P.

WOOD TAR.—£3 to £5 per ton, according to grade.

BROWN SUGAR OF LEAD.—£39 to £40 per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6d. to 1s. 5d. per lb., according to quality, Crimson, 1s. 3d. to 1s. 7½d. per lb., according to quality.

ARSENIC SULPHIDE, YELLOW.—2s. per lb.

BARYTES.—£3 10s. to £6 15s. per ton, according to quality.

CADMIUM SULPHIDE.—2s. 9d. per lb.

CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.

CARBON BLACK.—5½d. per lb., ex wharf.

CARBON TETRACHLORIDE.—£46 to £55 per ton, according to quantity, drums extra.

CHROMIUM OXIDE, GREEN.—1s. 2d. per lb.

DIPHENYLGUANIDINE.—3s. 9d. per lb.

INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.

LAMP BLACK.—£35 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.

LITHOPONE, 30%.—£22 10s. per ton.

MINERAL RUBBER "RUBPRON."—£13 12s. 6d. per ton f.o.r. London.

SULPHUR.—£9 to £11 per ton, according to quality.

SULPHUR CHLORIDE.—4d. per lb., carboys extra.

SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.

THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.

THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.

VERMILION, PALE OR DEEP.—5s. 3d. per lb.

ZINC SULPHIDE.—1s. 1d. per lb.

Pharmaceutical and Photographic Chemicals

Acid, Acetic, 80% B.P.—£39 per ton ex wharf London in glass containers.

Acid, Acetyl Salicylic.—2s. 4d. to 2s. 5d. per lb. Keen competition met.

Acid, Benzoic B.P.—2s. to 2s. 3d. per lb., according to quantity.

Acid, Boric B.P.—Crystal, £43 per ton; Powder, £47 per ton. Carriage paid any station in Great Britain, in ton lots.

Acid, Camphoric.—19s. to 21s. per lb.

Acid, Citric.—1s. 4d. to 1s. 4½d. per lb., less 5%.

Acid, Gallic.—2s. 8d. per lb. for pure crystal, in cwt. lots.

Acid, Pyrogallic, Crystals.—6s. 7d. per lb. Resublimed, 7s. 3d.

Acid, Salicylic.—1s. 3½d. to 1s. 4½d. per lb. Technical.—10¾d. per lb.

Acid, Tannic B.P.—2s. 10d. per lb.

Acid, Tartaric.—1s. 0½d. per lb., less 5%. Market firm.

Amidol.—8s. 6d. per lb., d/d.

Acetanilide.—1s. 7d. to 1s. 8d. per lb. for quantities.

Amidopyrin.—12s. 6d. per lb.

Ammonium Benzoate.—3s. 3d. to 3s. 6d. per lb., according to quantity.

Ammonium Carbonate B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks.

Atropine Sulphate.—11s. per oz. for English make.

Barbitone.—9s. per lb.

Benzonaphthol.—3s. 3d. per lb. spot.

Bismuth Carbonate.—12s. 6d. to 14s. 3d. per lb.

Bismuth Citrate.—9s. 6d. to 11s. 3d. per lb.

Bismuth Salicylate.—10s. 3d. to 12s. per lb.

Bismuth Subnitrate.—10s. 9d. to 12s. 6d. per lb. according to quantity.

Borax B.P.—Crystal, £27; Powder, £28 per ton. Carriage paid any station in Great Britain, in ton lots.

Bromides.—Potassium, 1s. 9d. to 1s. 11d. per lb.; sodium, 1s. 11d. to 2s. 2d. per lb.; ammonium, 2s. 2d. to 2s. 5d. per lb., all spot.

Calcium Lactate.—1s. 2½d. to 1s. 4d.

Chloral Hydrate.—3s. 3d. to 3s. 6d. per lb., duty paid.

Chloroform.—2s. 3d. to 2s. 7½d. per lb., according to quantity.

Creosote Carbonate.—6s. per lb.

Formaldehyde.—£40 per ton, in barrels ex wharf.

Guaiacol Carbonate.—7s. 6d. per lb.

Hexamine.—2s. 4d. to 2s. 6d. per lb.

Homatropine Hydrobromide.—30s. per oz.

Hydrastine Hydrochloride.—English make offered at 120s. per oz.

Hydrogen Peroxide (12 vols.).—1s. 8d. per gallon f.o.r. makers' works, naked.

Hydroquinone.—4s. 3d. per lb., in cwt. lots.

Hypophosphites.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

Iron Ammonium Citrate B.P.—2s. to 2s. 3d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 1d. to 2s. 4d. per lb.

Magnesium Carbonate.—Light Commercial, £31 per ton net.

Magnesium Oxide.—Light Commercial, £67 10s. per ton, less 2½%, price reduced; Heavy Commercial, £22 per ton, less 2½%; Heavy Pure, 2s. to 2s. 3d. per lb., according to quantity.

Menthol.—A.B.R. recrystallised B.P., 18s. 9d. net per lb., Synthetic, 12s. 6d. to 15s. 6d. per lb., according to quality.

Mercurials.—Red oxide, 5s. 8d. to 5s. 10d. per lb.; Corrosive sublimate, 4s. to 4s. 2d. per lb.; white precipitate, 4s. 6d. to 4s. 8d. per lb.; Calomel, 4s. 3d. to 4s. 5d. per lb.

Methyl Salicylate.—1s. 5d. to 1s. 7d. per lb.

Methyl Sulphonal.—16s. 6d. per lb.

Metol.—9s. per lb. British make.

Paraformaldehyde.—1s. 9d. for 100% powder.

Paraldehyde.—1s. 4d. per lb. (1s. 2d. in carboys.)

Phenacetin.—4s. per lb.

Phenazone.—6s. per lb.

Phenolphthalein.—4s. per lb.

Potassium Bitartrate 99/100% (Cream of Tartar).—80s. per cwt., less 2½% for ton lots.

Potassium Citrate.—1s. 11d. to 2s. 1d. per lb.

Potassium Ferricyanide.—1s. 9d. per lb. in cwt. lots. Quiet.

Potassium Iodide.—16s. 8d. to 17s. 5d. per lb., according to quantity.

Potassium Metabisulphite.—6d. per lb., 1-cwt. kegs included, f.o.r. London.

Potassium Permanganate.—B.P. crystals, 6½d. per lb., spot.

Quinine Sulphate.—1s. 8d. to 1s. 9d. per oz., in 100 oz. tins.

Resorcin.—4s. to 5s. per lb., spot.

Saccharin.—55s. per lb.

Salol.—3s. per lb.

Sodium Benzoate, B.P.—1s. 10d. to 2s. 2d. per lb.

Sodium Citrate, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923. 1s. 11d. to 2s. 2d. per lb., according to quantity.

Sodium Ferrocyanide.—4d. per lb. carriage paid.

Sodium Hyposulphite, Photographic.—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.

Sodium Nitroprusside.—16s. per lb.

Sodium Potassium Tartrate (Rochelle Salt).—75s. to 80s. per cwt., according to quantity.

Sodium Salicylate.—Powder, 1s. 9d. to 1s. 10d. per lb. Crystal, 1s. 10d. to 1s. 11d. per lb.

Sodium Sulphide, pure recrystallised.—10d. to 1s. 2d. per lb.

Sodium Sulphite, anhydrous, £27 10s. to £28 10s. per ton, according to quantity; 1-cwt. kegs included.

Sulphonal.—11s. per lb.

Tartar Emetic, B.P.—Crystal or Powder, 1s. 10d. to 1s. 11d. per lb.

Thymol.—12s. to 13s. 9d. per lb.

Perfumery Chemicals

Acetophenone.—10s. per lb.

Aubepine (ex Anethol).—10s. per lb.

Amyl Acetate.—3s. per lb.

Amyl Butyrate.—5s. 6d. per lb.

Amyl Salicylate.—3s. 3d. per lb.

Anethol (M.P. 21/22° C.).—6s. per lb.

Benzyl Acetate from Chlorine-free Benzyl Alcohol.—2s. 3d per lb.

Benzyl Alcohol free from Chlorine.—2s. 3d. per lb.

Benzaldehyde free from Chlorine.—2s. 6d. per lb.

Benzyl Benzoate.—2s. 9d. per lb.

Cinnamic Aldehyde Natural.—18s. 6d. per lb.

Coumarin.—11s. 9d. per lb.

Citronellol.—15s. per lb.

Citral.—9s. per lb.

Ethyl Cinnamate.—10s. per lb.

Ethyl Phthalate.—3s. per lb.

Eugenol.—9s. 6d. per lb.

Geraniol (Palmarosa).—19s. 3d. per lb.

Geraniol.—6s. 6d. to 14s. per lb.

Heliotropine.—5s. 9d. per lb.

Iso Eugenol.—14s. per lb.

Linalol ex Bois de Rose.—19s. per lb.

Linalyl Acetate.—20s. per lb.

Methyl Anthranilate.—9s. 3d. per lb.

Methyl Benzoate.—5s. per lb.

Musk Ketone.—34s. 6d. per lb.

Musk Xylol.—8s. per lb.

Nerolin.—4s. per lb.

Phenyl Ethyl Acetate.—12s. per lb.

Phenyl Ethyl Alcohol.—9s. 6d. per lb.

Rhodinol.—27s. 6d. per lb.

Safrol.—1s. 8d. per lb.

Terpineol.—1s. 6d. per lb.

Vanillin.—21s. 6d. to 23s. per lb.

Essential Oils

Almond Oil.—12s. 6d. per lb.

Anise Oil.—3s. 1d. per lb.

Bergamot Oil.—28s. 6d. per lb.

Bourbon Geranium Oil.—11s. per lb.

Camphor Oil.—60s. per cwt

Cinnamon Oil, Leaf.—5d. per oz.

Cassia Oil, 80/85%.—9s. 6d. per lb.

Citronella Oil.—Java, 85/90%, 2s. 10d. Ceylon, 2s. per lb.

Clove Oil.—6s. 6d. per lb.

Eucalyptus Oil, 70/75%.—1s. 10d. per lb.

Lavender Oil.—French 38/40%, Esters, 21s. per lb.

Lemon Oil.—8s. 6d. per lb.

Lemongrass Oil.—4s. 9d. per lb.

Orange Oil, Sweet.—11s. 9d. per lb.

Otto of Rose Oil.—Bulgarian, 65s. per oz. Anatolian, 40s. per oz.

Palma Rosa Oil.—12s. per lb.

Peppermint Oil.—Wayne County, 75s. per lb. Japanese, 10s. 6d. per lb.

Petitgrain Oil.—9s. per lb.

Sandal Wood Oil.—Mysore, 26s. per lb. Australian, 17s. 3d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE *by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

London, June 10, 1926.

THE demand still continues to be restricted owing to the prevailing industrial conditions. Prices keep very steady and there are few changes to report. Export trade remains disappointing.

General Chemicals

ACETONE has been in quietly steady demand, with small stocks offering at £81-£83 per ton.

ACID ACETIC.—The usual small inquiry has been received and prices are steady, technical 80% at £37-£39 per ton and pure £38-£40 per ton, according to quantities.

ACID FORMIC.—Demand is rather slow, though the price remains unchanged at £48 per ton for 85%, with small stocks available.

ACID LACTIC is only in small request, the price remaining steady at £43 per ton for the 50% weight technical quality.

ACID OXALIC.—No improvement in the demand can be reported; the price is fairly steady at 3⅝d. to 3¾d.

ACID TARTARIC.—A better demand has been experienced here, though there is no improvement to report in the price, which remains at 11½d. per lb.

ALUMINA SULPHATE has been in fair request, without change in price at £5 15s. to £6 per ton.

AMMONIUM CHLORIDE is in small demand, with the price unchanged at £18 to £19 per ton.

ARSENIC.—Inquiries are still poor, with prices a shade easier at £13 15s., and even this figure could be slightly lowered for large quantities.

BARIUM CHLORIDE is in better supply, and the price is slightly easier at £10 to £10 5s. per ton.

EPSOM SALTS.—A fair amount of inquiries have been received and business has been concluded at £5 12s. 6d. per ton.

FORMALDEHYDE.—After being quiet for some considerable time, a better demand is being received, and the price is steady at about £41.

IRON SULPHATE continues in short supply, with good demand for home and export.

LEAD ACETATE has been a bright spot, with the white quality at £45 to £45 10s. and the brown at about £43 10s. The price appears to be tending firmer.

METHYL ALCOHOL.—There is no change in the price or position.

METHYL ACETONE is only in small demand, and the price is slightly easier at about £56.

POTASSIUM CARBONATE and CAUSTIC is in fair request, with no quotable change in price.

POTASSIUM CHLORATE continues firm, and a fair amount of business is offering, especially for export.

POTASSIUM PRUSSIATE is in slightly better demand, and the price is firm at 7d. to 7¼d. lb.

POTASSIUM PERMANGANATE shows no change in price, with demand fair.

SODIUM ACETATE.—The demand has not been quite so insistent, although the product still remains in rather short supply. The price continues firm at about £21 per ton, with most of the producers sold ahead.

SODIUM BICHROMATE.—British makers' prices are unchanged, with foreign material competing keenly.

SODIUM NITRITE is in quietly steady demand, at £20 10s. to £21 per ton.

SODIUM PHOSPHATE.—The price remains unchanged at about £13 10s.

SODIUM PRUSSIATE.—A better demand has been received, and the price is steady at 3¾d. to 4d.

SODIUM SULPHIDE continues slow, with the price easy for imported makes.

ZINC SULPHATE is in fair request, with little change in price.

Coal Tar Products

Owing to the continuance of the coal strike, prices quoted are in all cases more or less nominal.

90's BENZOL, delivery of which is practically impossible, is quoted at 2s. 1d. per gallon, and it is doubtful whether any supplies are available, even at this figure.

PURE BENZOL is practically unobtainable, even at 2s. 6d. per gallon.

CREOSOTE OIL is firm at 6¾d. per gallon on rails in the provinces, but no supplies are available for spot delivery, while the price in London for spot parcels is in the region of 7¼d. per gallon at makers' works.

CRESYLIC ACID is in good demand, especially the Pale quality 97-99%; this is fully worth 2s. per gallon on rails. The Dark quality 95-97% is quoted at 1s. 10d. per gallon on rails.

SOLVENT NAPHTHA is quoted at about 1s. 7½d. per gallon on rails at makers' works, but very few supplies are available.

HEAVY NAPHTHA has improved slightly to 1s. 2d. to 1s. 3d. per gallon on rails. A little still remains available.

NAPHTHALENES.—The lower grades are weaker, while the 76/78 quality is worth about £6 10s. per ton, and 74/76 quality about £5 10s. per ton.

PITCH is dull with little demand; prices are unchanged and more or less nominal at 70s. to 75s. per ton f.o.b. U.K. ports.

Latest Oil Prices

LONDON.—LINSEED OIL less active at 10s. to 15s. decline. Spot, £33; June and July-August, £32; September-December, £32 7s. 6d.; January-April, £33. RAPE OIL nominal. Crude, extracted, spot, £49; technical refined, £51. COTTON OIL firm and unaltered. Refined common edible, £44 10s.; Egyptian crude, £39 10s.; deodorised, £46 10s. TURPENTINE firm and 1s. 9d. per cwt. dearer for American spot at 69s. 9d.; June, 67s. 3d.; and July-December, 60s. 3d., sellers.

HULL.—LINSEED OIL.—Naked, spot, to September-December, £32 10s.; January-April, £33. COTTON OIL.—Naked Bombay crude, £37; Egyptian crude, £40 7s. 6d.; edible refined, £44; technical, £41 10s. PALM KERNEL OIL.—Crushed naked, 5½ per cent., £44 10s. GROUNDNUT OIL.—Crushed/extracted, £47 10s.; deodorised, £51 10s. SOYA OIL.—Extracted and crushed, £37 10s.; deodorised, £41. RAPE OIL.—Crude extracted, £48 10s.; refined, £50 10s. per ton net cash terms, ex mill. CASTOR OIL and COD OIL unchanged.

Nitrogen Products

Export.—During the last week the market for sulphate of ammonia has been quiet, prices remaining unchanged. The Mediterranean countries as well as the Far East continue to show interest. The West Indies, too, have been inquiring for small quantities. The British producers are hesitating about accepting any but small orders on account of the uncertainty of production.

Home.—Home requirements are small and these are being satisfied from works that continue to produce. The British production at the moment is exceptionally low on account of the stoppage at the collieries and the seasonal reduction in production from gas companies. The home price is maintained at £13 1s. per ton for neutral quality, basis 21·1% nitrogen, delivered to consumer's nearest station.

Nitrate of Soda.—The nitrate market has been quiet with a downward tendency. As there are large stocks in Chile and also in Europe and on the Continent, as expected, the nitrate price for the coming season has been reduced by 1s. per metric quintal; this is equivalent to 10s. per ton reduction. For the new season there is no "Fall" clause in operation. Nitrate producers are pressing the Chilean Government for a reduction in the export tax. Unless they are successful it appears that there will be a fall in the production of nitrate.

Calcium Cyanamide

INTEREST continues to be shown in the use of this material for the destruction of charlock. Calcium cyanamide contains 19 per cent. nitrogen and about 60 per cent. lime. The price to British farmers for June delivery is £10 6s. per ton for 4 ton lots, carriage paid to any railway station.

IMPORTANT ADDITIONS are planned for the Port Colborne, Ont., plant, to be made this year at a cost of three-quarters of a million dollars, by the International Nickel Co. Decision to add the new unit is prompted by the ever increasing demand for electrolytic nickel and although the plant is at present equipped to produce 350,000 pounds of this electrolytic nickel per month, the addition will permit a total monthly production of 1,000,000 pounds. The new unit is one of six of similar size contemplated by the company.

GERMAN ALUMINIUM WARE manufacturers are complaining that their industry received a severe check last year. Fifty per cent. of the German production formerly went to North America, but owing to the increase in duties, representing about 80 to 100 per cent. of the value of the German goods, sales in this field have become increasingly restricted. Another factor operating against German makers has been the tariff war with Spain. Many countries have also been erecting their own aluminium finishing factories, and this has forced on Germany not only restriction of output, but also total cessation in some districts. All these factors have contributed in no small degree to last year's poor trading result in the German aluminium industry. The Aluminium Co. of America recently indicated its desire to appeal to the U.S. authorities for a reduction in the aluminium tariff, as the company's Canadian plant would be sending a large portion of its output to the United States.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE *by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.*

Glasgow, June 9, 1926.

THE still unsatisfactory position in the coal industry is now being felt more directly in the heavy chemical trade, and whilst most of the big producers are still giving fairly satisfactory delivery some of the smaller manufacturers are being severely handicapped. Offers of continental products are numerous and shipments are coming through without hindrance, but there is a little delay.

Industrial Chemicals

ACID, ACETIC, 98/100%.—£55 to £67 per ton, according to quantity and packing, c.i.f. U.K. port; 80% pure, £39 to £41 per ton; 80% technical, £38 to £39 per ton.

ACID, BORIC.—Crystal, granulated or small flakes, £37 per ton; powdered, £39 per ton, packed in bags, carriage paid U.K. stations.

ACID, CARBOLIC, ICE CRYSTALS.—Still in poor demand. Quoted 4¾d. per lb. delivered or f.o.b. U.K. ports, but this price nominal.

ACID, CITRIC, B.P. CRYSTALS.—In fairly good demand and price unchanged at about 1s. 3⅜d. per lb., less 5%, ex store. Quoted 1s. 3¼d. per lb., less 5%, ex wharf, early shipment.

ACID, FORMIC, 85%.—Unchanged at about £50 per ton, ex wharf, prompt delivery. On offer from the continent at £49 per ton, c.i.f. U.K. ports.

ACID, HYDROCHLORIC.—In little demand. Price 6s. 6d. per carboy, ex works.

ACID, NITRIC, 80°.—Usual steady demand and price unchanged, £23 5s. per ton, ex station, full truck loads.

ACID, OXALIC, 98/100%.—Spot material quoted 3¾d. per lb., ex store, but this price could probably be shaded. Offered from the continent at 3½d. per lb., c.i.f. U.K. ports.

ACID, SULPHURIC.—144°, £3 12s. 6d. per ton, 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID, TARTARIC, B.P. CRYSTALS.—Still in good demand and price remains unchanged at about 11½d. per lb., less 5%, ex wharf; 11¾d. to 1s. per lb. is asked for small quantities.

ALUMINA, SULPHATE, 17/18%, IRON FREE.—On offer from the continent at about £5 8s. 6d. per ton, c.i.f. U.K. ports. Spot material quoted £6 5s. per ton, ex store.

ALUM, LUMP POTASH.—Spot material quoted £9 per ton, ex store. On offer from the continent at about £7 15s. per ton, c.i.f. U.K. ports. Crystal powder quoted about £7 10s. per ton, c.i.f. U.K. ports.

AMMONIA, ANHYDROUS.—Imported material selling at about 11¼d. to 11½d. per lb., ex wharf, containers extra and returnable.

AMMONIA, CARBONATE.—Lump, £37 per ton; powdered, £39 per per ton, packed in 5 cwt. casks delivered or f.o.b. U.K. ports.

AMMONIA, LIQUID, 880°.—Unchanged at about 2¼d. to 3d. per lb., delivered according to quantity.

AMMONIA, MURIATE.—Grey galvanisers' crystals of British manufacture quoted £23 10s. to £25 10s. per ton, ex station. Continental on offer at about £21 10s. per ton, c.i.f. U.K. ports. Fine white crystals of continental manufacture. Quoted £18 5s. per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED CORNISH.—Unchanged at about £15 15s. per ton, ex wharf, early delivery. Spot material on offer at £16 7s. 6d. per ton, ex store.

BARIUM CHLORIDE, 98/100%.—Quoted £8 15s. per ton, c.i.f. U.K. ports. Prompt shipment from the continent. Spot material on offer at about £10 10s. per ton, ex store.

BLEACHING POWDER.—English material unchanged at £9 10s. per ton, ex station. Contracts 20s. per ton less. Continental on offer at about £7 10s. per ton, c.i.f. U.K. ports.

BARYTES.—English material unchanged at £5 5s. per ton, ex works. Continental quoted £5 per ton, c.i.f. U.K. ports.

BORAX.—Granulated, £22 10s. per ton. Crystals, £23 per ton. Powdered, £24 per ton, carriage paid U.K. stations.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 12s. 6d. to £5 17s. 6d. per ton, ex station. Continental rather easier about £3 17s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—In moderate demand for export, quoted £3 17s. 6d. per ton, c.i.f. U.K. ports. On offer for home consumption at about £3 10s. per ton, f.o.r. works.

COPPER, SULPHATE, 99/100%.—Good inquiry for export. English material quoted £23 5s. per ton, f.o.b. U.K. ports. Continental on offer at about £22 5s. per ton, ex wharf.

FORMALDEHYDE, 40%.—Spot material available at about £38 per ton, ex store. Quoted £37 per ton, c.i.f. U.K. ports, prompt shipment.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental on offer at about £3 5s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Inclined to be higher at about £36 10s. per ton, ex store.

LEAD, WHITE.—Still on offer at £37 10s. per ton, ex store.

LEAD, ACETATE.—Quoted £44 5s. per ton, c.i.f. U.K. ports, prompt shipment from the continent. Brown about £38 15s. per ton, c.i.f. U.K. ports.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

POTASH, CAUSTIC, 88/92%.—Syndicate prices vary from £25 10s. to £28 15s. per ton, c.i.f. U.K. ports, according to quantity and destination. Spot material available at about £29 per ton, ex store.

POTASSIUM, BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Quoted £25 5s. per ton, ex wharf early delivery. Spot material on offer at £26 10s. per ton, ex store. 90/94% quality quoted £22 5s. per ton, c.i.f. U.K. ports.

POTASSIUM CHLORATE, 98/100%.—Powdered. Rather cheaper. quotations from the continent now quoted £27 per ton, c.i.f. U.K. ports.

POTASSIUM NITRATE (SALTPETRE).—Spot material on offer at about £24 5s. per ton, ex store. Quoted £22 per ton, c.i.f. U.K. ports, prompt shipment.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quote 7½d. per lb., ex store, spot delivery. To come forward, 7d. per lb., ex wharf.

POTASSIUM PRUSSIATE, YELLOW.—Quoted 7¼d. per lb., ex wharf, early delivery. Spot material on offer at 7¼d. per lb., ex store.

SODA CAUSTIC.—76/77%, £17 10s. per ton; 70/72%, £16 2s. 6d. per ton; broken 60%, £16 12s. 6d. per ton; powdered, 98/99%, £20 17s. 6d. per ton. All carriage paid U.K. stations, spot delivery. Contracts 20s. per ton less.

SODIUM ACETATE.—Spot material scarce, but limited supplies available at £20 10s. per ton, ex store, quoted £19 15s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M. W. quality, 30s. per ton less.

SODIUM BICHROMATE.—English price unchanged at 3½d. per lb., delivered.

SODIUM CARBONATE, SODA CRYSTALS.—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality, £1 7s. 6d. per ton more (alkali 58%), £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE OF SODA.—Large crystals of English manufacture quoted £9 per ton, ex store. Minimum 4 ton lots. Pea crystals, £14 10s. per ton, ex station. Continental on offer at about £7 12s. 6d. per ton, c.i.f. U.K. ports.

SODIUM NITRATE.—Quoted £13 per ton, ex store; 96/98% refined quality, 7s. 6d. per ton extra.

SODIUM NITRITE, 100%.—Quoted £24 per ton, ex store; offered from the Continent at about £22 5s. per ton, c.i.f. U.K. ports.

SODIUM PRUSSIATE, YELLOW.—Spot material quoted 4½d. per lb., ex store. Offered for early delivery at 4d. per lb., ex wharf.

SODIUM SULPHATE, SALTCAKE.—Price for home consumption, £3 10s. per ton, ex works. Good inquiry for export and higher prices obtainable.

SODIUM SULPHIDE, 60/62%.—Solid, £13 5s. per ton; broken, £14 5s. per ton; flake, £15 5s. per ton; crystals 31/34%, £8 12s. 6d. per ton. All delivered buyers' works U.K., minimum 5 ton lots with slight reduction for contracts; 60/62% solid quality offered from the Continent at about £9 15s. per ton, c.i.f. U.K. ports. Broken, 15s. per ton more. Crystals 30/32%, £7 per ton, c.i.f. U.K. ports.

SULPHUR.—Flowers, £11 10s. per ton; roll, £10 5s. per ton; rock, £10 5s. per ton; floristella, £9 15s. per ton; ground American, £9 per ton; ex store, spot delivery. Prices nominal.

ZINC CHLORIDE.—British material, 96/98% quoted £23 15s. per ton, f.o.b. U.K. port; 98/100% solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental make on offer at about £11 per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

Coal Tar Intermediates

H. ACID.—3s. 3d. per lb. Fair home inquiries.

BETA NAPHTHOL.—11d. to 1s. per lb. Some home inquiries.

DINITROBENZOL.—9d. per lb. Some home inquiries.

ALPHA NAPHTHOL.—2s. per lb. Small home inquiries.

BENZALDEHYDE.—2s. 1½d. per lb. Some home inquiries.

Manchester Chemical Market

[From Our Own Correspondent.]

Manchester, June 10.

Further very drastic reductions in operations at the Lancashire cotton mills, the result of slackness of trade and shortage of coal supplies, are not going to assist the chemical trade in the Manchester district. As it is, the demand cannot be described as anything better than moderate so far as prompt business is concerned. Export inquiry, also, is on quiet lines, with most of it on Colonial account. A satisfactory feature of the market, under the circumstances, is that quotations in the majority of cases keep very steady.

Heavy Chemicals

Prices quoted here for hyposulphite of soda show little change, commercial crystals offering at £9 5s. and photographic quality at about £14 10s. per ton, a quiet business being done. Sulphide of sodium continues very dull and values are easier at £10 10s. per ton for 60-65 per cent. concentrated solid and round £9 for commercial. Little buying interest is being shown in phosphate of soda which is weak at about £12 10s. per ton. Glauber salts are inactive but unchanged at £3 5s. per ton, with saltcake in limited request at £3. Although there is not much apparent demand for acetate of soda, prices keep very firm at from £20 to £21 per ton. At £10 10s. per ton bicarbonate of soda is still unchanged but sales are rather slow. Caustic soda meets with a quietly steady demand at firm prices, with 60 per cent. strength quoted at £15 2s. 6d. per ton and 76 per cent. at £17 10s. Bleaching powder is rather quiet at £8 10s. per ton. Both for bichromate and chlorate of soda demand is on the slow side at about 3¼d. per lb. in each case. Alkali is fully maintained at £6 15s. per ton, and a fair amount of business is being put through.

Yellow prussiate of potash is still quoted at 7d. per lb., without attracting any big weight of demand. Caustic potash, 90 per cent. material, is quite steady at from £26 10s. to £27 per ton. Carbonate of potash is in fair request at round £26 per ton. A quiet business is being done in permanganate of potash and not much alteration in values has occurred during the week; B.P. quality is currently quoted at 7d. per lb. and commercial at about 5¼d. Bichromate of potash is selling in moderate quantities and prices are unchanged at 4¼d. per lb. For chlorate of potash there is a limited demand at 4d. per lb.

An easy tendency in the case of arsenic is still to be observed and not much is moving; white powdered, Cornish makes, is on offer at from £13 10s. to £13 15s. per ton, on rails. Sulphate of copper is being taken up in relatively small quantities, but quotations are fairly steady at about £23 15s. per ton. Nitrate of lead is maintained at £40 to £41 per ton, but inquiry for this material is rather slow. White acetate of lead is still selling at £45 per ton and brown at about £41. Grey acetate of lime is again slightly easier at about £15 10s. per ton, with brown about unchanged on the week at £7 15s.

Acids and Tar Products

Citric acid is quite steady and a quiet demand is being met with, current offers being round 1s. 3¼d. per lb. Tartaric acid is showing a somewhat firmer tendency at from 11¼d. to 11½d. per lb. Acetic acid is fully maintained at about £36 10s. per ton for commercial 80 per cent. and £66 to £67 for glacial, and a moderate inquiry has been reported this week. Oxalic acid continues inactive but at 3½d. to 3⅝d. per lb. there is little or no change in prices.

From 72s. 6d. to 75s. per ton, f.o.b., is being mentioned in connection with pitch, but prices are largely nominal in the absence of any important business. There is some inquiry for creosote oil and quotations are steady at from 6¼d. to 6¾d. per gallon. Cresylic acid is quiet but steady at round 1s. 9d. per gallon. Solvent naphtha is quoted at about 1s. 6d. per gallon, with demand on a limited scale. Carbolic acid is very dull at 4¾d. per lb. for crystals and 1s. 4½d. per gallon for crude material.

Chinese Salt Revenues Seized

News was received this week that the Chinese salt revenues had been seized by the military authorities and the functions of the International Salt Administration suspended. Three Chinese loans are directly secured on these salt revenues, and their seizure has had an immediate effect on Chinese credit.

Dyers and General Strike

Union's Undertaking to Employers

During the general strike serious inconvenience and loss of output were occasioned to many firms in the dyeing trade through the action of one of the trade unions whose members are engaged in that industry in calling out first the transport workers and subsequently the production operatives in contravention of the general trade custom which requires a week's notice by individual workers before employment can be terminated. In the case of branches of the Bradford Dyers' Association, Ltd., the action of the trade union is to form the subject of legal proceedings.

Other instances in which the existing agreement was broken through trade union action occurred in Manchester and in North Cheshire. The matter was taken up by the Employers' Federation of Dyers and Finishers, and as a result the following declaration has been made by the trade union concerned—namely, the Amalgamated Society of Dyers, Bleachers, Finishers, and Kindred Trades (the headquarters of which are in Bradford)—and signed by Mr. James Harrison (chairman) and Mr. W. Rushworth (secretary), and addressed to the Employers' Federation of Dyers and Finishers:—

"On behalf of the Amalgamated Society of Dyers, Bleachers, Finishers, and Kindred Trades, we admit that the society in calling the recent strike committed a wrongful act against the members of your federation, and we agree that your members have not, by reinstatement of their workpeople, surrendered their legal rights to claim damages arising out of the strike from strikers and those responsible for the calling of such a strike. The Amalgamated Society of Dyers, Bleachers, Finishers, and Kindred Trades undertakes not again to instruct its members to strike without complying with all the agreements in existence and giving the customary week's notice to terminate their employment. The Amalgamated Society of Dyers, Bleachers, Finishers, and Kindred Trades further undertakes to give no support of any kind to its members who take any action unauthorised by the society."

Russian Chemical Industry

The Supreme Economic Council of Russia is working out a plan for syndicating the heavy chemical, aniline colour, paint, varnish, coke-benzole, and the wood products industries into one organisation, the specific purpose of the new concern being the sale of the total production of the various concerns enumerated, which would each participate in the new trust or syndicate, besides various Government Departments, etc., including large consumers. The capital of the trust is to be 12,000,000 roubles; the annual turnover is estimated at 150,000,000 r. The scheme is being pressed forward to be ready this month.

The first half-year's production of the Northern Chemical Trust amounted to 99 per cent. of programme. Raw material, fuel and other materials were dearer, and the heavy load put on the factories resulted in some breakages. Considerable differences have been established between the cost and sales prices of chrome salts and superphosphates. It has been found particularly hard to keep up to standard qualities of superphosphate, owing to defective quality in raw materials. But the Board of the Trust has decided that its production, though unprofitable, must increase owing to its importance to agriculture.

Metallurgical Research Awards

At the annual meeting of the Iron and Steel Institute, on Friday, June 4, the following Carnegie Scholarship awards for 1926 were announced:—F. H. Arnfelt, £100 from the Carnegie Fund of the Institute. He is an assistant at the Institute of Metallography, Stockholm; V. N. Krivobok, £100 from the Carnegie Research Fund of the Institute; A. G. Lobley and C. L. Betts, jointly, £100; A. R. Page, of the Birmingham Small Arms Company, £100; Tibor Ver, of the Mechanical Technical Laboratory, Technical High School, Budapest, £100; L. B. Pfeil, £100; J. H. Partridge, in the Metallurgical Department of the University, Birmingham, who received £100 in 1925, a further award of £50. These grants were made to enable the beneficiaries to engage in certain specified branches of research.

Tariff Changes

AUSTRALIA.—Customs tariff amendments affecting chemicals, etc., have been passed by the House of Representatives and await ratification by the Senate.

CANADA.—New proposals affecting ethylene glycol, spraying machines, etc., are embodied in the Budget Resolutions introduced by the Canadian Minister of Finance in the Canadian Parliament on April 15.

SOUTH AFRICA.—Proposals for a general increase of duty on imported chemicals, etc., are foreshadowed in the text of a resolution introduced into the Union Parliament by the Minister of Finance.

HUNGARY.—In virtue of a decree (No. 32,000/1926), dated April 19, charcoal, coal, lignite, artificial fuel, bone coal and coke which may be imported into Hungary free of Customs duty are subject to the turnover tax of 2 per cent. *ad valorem*.

ITALY.—The effect of a new Royal Decree announced in the *Gazzetta Ufficiale* for April 27, which came into force on April 28, is to increase by 1½ lire (gold) per kilogramme the duties payable on artificial silk yarn measuring less than 60,000 metres to the half kilogramme.

PORTUGAL.—From June 1 the Portuguese Customs Tariff will be modified in favour of certain chemicals, etc., and a new classification of duties has been fixed. Portugal is also proposing to increase duties on sugar and glucose, with a 50 per cent. preference in favour of colonial grown sugar.

SPAIN.—A Royal Decree, effective from May 20, imposes a manufacturing tax of 10 pesetas per 100 kilogs on edible groundnut and sesame seed oils manufactured in Spain, with an equivalent tax in addition to the Customs Duty, on imported oils of these kinds.

TUNIS.—A decree dated April 16, increases from 3 to 4 the "coefficient of increase" applicable to the Customs duties on lubricating oils, heavy oils and petroleum residues, with the exception of fuel oil, pitch and coke.

LITHUANIA.—Certificates of origin issued by British Chambers of Commerce and attested by Lithuanian Consular Officers will probably be required in the future as the Government is reported to be preparing to give effect to the provisions of the new Lithuanian Tariff respecting the imposition of a surtax of 30 per cent. of the tariff duties on goods imported from countries which have not yet concluded commercial agreements with Lithuania.

BRITISH INDIA.—A Tariff Board Inquiry is being conducted to consider the basis of continued protection to the Indian Steel Industry.

GRENADA.—The importation and exportation of raw opium, coca leaf, Indian hemp or resin is prohibited, and export or import of the following drugs is also prohibited except under licence: Medicinal opium; ecgonine; morphine, diacetylmorphine, cocaine and their respective salts; all official and non-official preparations (including anti-opium remedies), containing not less than 0·2 per cent. of morphine, or not less than 0·1 per cent. of cocaine; all preparations containing diacetylmorphine; galenical preparations (extract and tincture) of Indian hemp; and any other narcotic drugs.

SARAWAK.—Alum and gypsum imported into Sarawak pays an import duty at the rate of 15 dols. and 20 dols. per picul respectively.

SIERRA LEONE.—A Dangerous Drugs Ordinance Order, assented to on April 8, 1926, regulates the manufacture, possession, importation and exportation of dangerous drugs in the Colony.

NIGERIA.—Dyestuffs, produced or manufactured in Germany, and previously prohibited, are now allowed in Nigeria.

BULGARIA.—The export duty on cement has been reduced to 1 per cent. ad valorem.

GREECE.—The surtax imposed on the import of benzine has been increased from 50 to 80 per cent. of the Customs duty.

FRANCE.—New classifications for Customs Duty are made on Dyestuffs, aluminium powder, cast iron containing 15 per cent. manganese, electro-medical apparatus, etc.

PORTUGAL.—The sale of imported margarine is authorised provided that its composition contains nothing injurious to health.

SYRIA.—The prohibition of certain nitrate of soda into Syria has been modified and now applies to nitrate of soda containing more than 15½ per cent. of nitrogen.

MEXICO.—The import duty on chlorine is now 0.01 pesos per kilo. gross.

SYRIA AND LEBANON.—Duty free importation of nitrogenous, phosphatic, and potash fertilisers and organic manures is not now subject to the attestation and formal guarantee of the agricultural service.

UNITED STATES OF AMERICA.—The importation of synthetic phenolic resin of form C, and of all articles manufactured wholly or in part thereof, except articles made by moulding synthetic phenolic resin when mixed with other articles, has been prohibited. A public investigation into the subject has been ordered by the Tariff Commission. The Bureau of Animal Industry has issued a notification announcing that the revised regulations affecting the import into the United States of fertilisers and bags will become effective on July 1.

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

CHEMICAL PRODUCTS, ETC.—An Athens firm of commission agents and importers desires to obtain the representation of British manufacturers for the above goods. (Reference No. 677.)

CENTRIFUGAL PUMPS, ETC.—The State Domains Administration of Cairo invites tenders for the supply of two centrifugal pumps and three semi-Diesel engines of 28–30 h.p. Adjudication of these contracts is fixed for July 1, 1926, and copies of the specifications and tender forms may be obtained on application to the State Domains Administration, Savoy House, Cairo. A copy of each contract specification may also be inspected at the Department of Overseas Trade Offices, Room 47. British firms interested, and not represented in Egypt, should note that the Department will furnish names and addresses of British merchant houses with Egyptian connections willing to handle tenders on their behalf. (Reference A. 3152.)

VULCANISING APPARATUS.—A firm of agents in Stockholm desire the representation for British manufacturers of the above. (Reference No. 736.)

DRUGS, ETC.—A firm of Commission Agents in Para desires to secure representation for British exporters of the above. (Reference No. 739.)

CALCIUM CARBIDE, ETC.—The State Electricity Supply Works at Montevideo are inviting tenders for the supply of granulated calcium carbide, white and green oil paint in paste, crystallised soda, etc. Local representation is essential and sealed tenders should be sent to the offices of the Administración-General de las Usinas Eléctricao del Estado, Calle Uruguay, 980, Montevideo, up to 4 p.m. on July 29. (Reference No. C.X. 1991.)

FIREFIGHTING EQUIPMENT.—The Winnipeg agents for an American commercial vehicle desire the representation of British manufacturers. (Reference No. 750.)

DRUGGISTS' SUNDRIES.—A Wellington agent desires to be placed in touch with British manufacturers, with a view to representation in New Zealand on a commission basis. (Reference No. 758.)

PRESSURE GAUGES.—The South African Railways and Harbours are calling for tenders for the supply of vacuum and steam pressure gauges. Tenders are due at Johannesburg not later than noon on July 22, 1926. (Reference A.X. 3235.)

MINERALS AND NON-FERROUS METALS.—A firm in Rome desires to represent British firms on a commission basis, as their buying agent in Italy for minerals, and as a selling agent in Italy for such metals as copper, tin, platinum, etc. (excluding iron and steel). Corresponds in Italian, English or French. (Reference No. 776.)

PHARMACEUTICAL PRODUCTS, ETC.—A firm of agents in Munich desires to secure the representation on a commission basis of British manufacturers. (Reference No. 772.)

CHEMICAL MANURES.—An agent in Brussels desires to obtain the representation of British manufactures for supplying the Egyptian and Sudan Governments, and firms in Egypt. He is willing to visit England to interview interested firms, and intends settling in Egypt if he secures such an agency. Correspondence in English. (Reference No. 762.)

CEMENT, SOYA BEAN OIL, ETC.—A commission agent in Valparaiso wishes to secure British manufacturers' agencies on a commission basis. (Reference No. 789.)

EDIBLE SOYA BEAN OIL.—A firm of commission agents in Valparaiso desire to secure British manufacturers' representation on a commission basis. (Reference No. 790.)

Company News

MINERALS SEPARATION, LTD.—The directors announce a dividend of 10 per cent., less tax, for the year 1925, payable on June 30.

AMERICAN CYANAMID CO.—A dividend of 1 per cent. and an extra dividend has been declared on the common stock, payable on July 1.

ROSARIO NITRATE CO.—A final dividend of 2½ per cent., less tax, is announced, making 7½ per cent. for the year ended December 31 last.

WALL PAPER MANUFACTURERS, LTD.—An interim dividend of 4 per cent. in respect of the current financial year is announced on the ordinary shares.

PINCHIN JOHNSON AND CO.—The directors announce the usual dividend at the rate of 6½ per cent. per annum, less tax, on the preference shares for the six months to June 30, payable in July.

SANTA RITA NITRATE CO.—The net profit for the year 1925 amounted to £15,812, against £20,807 for 1924. A dividend of 10 per cent., less tax, is recommended, and the balance will be carried forward.

NOBEL INDUSTRIES, LTD.—A further dividend on the ordinary shares of 7 per cent., less tax, making 10 per cent. for the year 1925, is announced, and a dividend on the deferred shares of 5 per cent., less tax, both payable on July 8.

AMERICAN CELLULOSE AND CHEMICAL MANUFACTURING CO.—A dividend of 3½ per cent. on the 7 per cent. first participating preferred stock, the first to be declared by the company since its incorporation in 1918, will be paid on June 30.

LAUTARO NITRATE CO.—The gross trading profit for the past year amounted to £1,448,401; the accumulated reserve funds transferred from Compania de Salitres de Antofagasta amounted to £590,818, making a total of £2,039,219. After deducting general expenses, interests, etc., there remains £360,554 to be carried forward.

ASSOCIATED LEAD MANUFACTURERS.—The accounts for the year ended December 31 last show a credit balance of £132,071. The interest on the notes absorbed £11,243 and the dividend on the preference shares £38,125. It is proposed to write off preliminary expenses amounting to £32,873, but no dividend is to be paid on the ordinary shares in view of the prevailing conditions. The sum of £49,831 is carried forward.

W. J. BUSH AND CO.—The report for the year ended December 31 last states that the accounts show a gross profit of £240,419. After providing for debenture interest, expenses, and directors' remuneration, and making allowances for depreciation, there is a net profit of £38,111, which, with £47,973 brought forward, makes a total of £86,083. The directors recommend a final dividend of 7 per cent., making 10 per cent. for the year, carrying forward £54,834. The annual meeting will be held at the Institute of Chartered Accountants, Moorgate Place, London, on June 14, at 11 a.m.

ZINC CORPORATION.—A profit of £544,946 is reported for the year 1925, to which is added £94,263, being the balance of appropriations for mine development, and new plant, now written back, giving a total of £639,209. Income tax absorbs £30,207, the fixed preferential and interim participating dividends take £183,963, the appropriation for mine development and new plant is again £100,000, the reserve again receives £20,000, while the cost of additional shares in Broken Hill Associated Smelters Proprietary and Australian Ore and Metal Co., amounting to £80,125, is also deducted. The directors propose a final participating dividend of 5s. per share (making total distributions for the year of 8s. per share, or 80 per cent., on the ordinary, and 12s. per share, or 60 per cent., on the preference, shares). This absorbs £224,708, and leaves the "carry forward" about £200 higher at £13,374. For 1924 the distribution on the ordinary shares was 50 per cent.

New Chemical Trade Marks

Applications for Registration

This list has been specially compiled for us by Mr. H. T. P. Gee, Patent and Trade Mark Agent, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to July 2, 1926.

"SORBSIL."

468,236.—For chemical substances used in manufactures, photography or philosophical research, and anti-corrosives. Class 1. Joseph Crosfield and Sons, Ltd., Bank Quay, Warrington, Lancashire; soap manufacturers. March 18, 1926.

"GASIL."

468,237.—Chemical substances used in manufactures, photography or philosophical research, and anti-corrosives. Class 1. Joseph Crosfield and Sons, Ltd., Bank Quay, Warrington, Lancashire; soap manufacturers. March 18, 1926.

"HYCOLITE."

469,605.—For paints and distemper paints and ingredients thereof. Class 1. Heyl's Colours, Ltd., 1, Windmill Road, Luton, Bedfordshire; manufacturers. May 5, 1926.

"WALLOL."

468,654.—For paints, enamels, varnishes and fillers. Class 1. W. W. Hill, Son and Wallace, Ltd., Irwell Paint and Varnish Works, Elton Street, Broughton Bridge, Salford, Manchester; manufacturers. March 31, 1926.

"VULCAN."

469,196.—For chemical substances used in manufactures, photography or philosophical research, but not including fluxes, boiler composition, soldering paste, paints and varnishes, metallic cement for filling up holes and other defects in metal castings, preservatives oils, for wood and stone work and coal-tar dyestuffs, and not including any goods of a like kind to any of these excluded goods. Class 1. The General Chemical and Pharmaceutical Co., Ltd., 57 and 59, Church Road, Willesden, London, N.W. 10; manufacturers. April 20, 1926.

"MULPHALT."

465,517.—For raw or partly prepared vegetable, animal and mineral substances used in manufactures, not included in other classes. Class 4. The firm trading as Amoa Chemical Co., 9, Marvels Parade, Marvels Lane, Grove Park, Lee, London, S.E.12; chemical manufacturers. December 22, 1925. (To be Associated. Sect. 24.)

American Dye Imports

ACCORDING to the *American Dyestuff Reporter* foreign dyes imported through New York and other ports during the month of March totalled 487,804 lb. with an invoice value of $435,891, as compared with 527,964 lb. at $488,501 in March, 1925. The total imports for the first three months of 1926 were 1,157,290 lb. with an invoice value of $1,097,164, as compared with a total for the same period of last year of 1,305,207 lb. valued at $1,213,145. The five leading dyes, by quantity, imported during March, 1926, were:

	Lb.
Vat Blue GCD (single strength)	26,378
Ciba Red R Double Paste (single strength)	22,042
Rhodamine B Ex. (single strength)	16,575
Ciba Scarlets (single strength)	14,021
Alizarine Blue SWR (single strength)	13,220

The percentage of dyes by country of shipment was as follows:

	1926		
	Mar.	Feb.	Jan.
Germany	48	53	27
Switzerland	34	31	50
France	3	5	11
England	6	3	6
Belgium	4	4·5	3
Canada	2·5	0	1
Italy	2	3	1
Holland	0·5	0·5	1

New Companies Registered

ARMSTRONG PRODUCTS, LTD.—Registered June 5, 1926. Manufacturers of chemicals and engineering products. Nominal capital, £1,000 in £1 shares. Solicitor: A. Evans, Sandbach, Cheshire.

BECCO ENGINEERING AND CHEMICAL CO., LTD., 158, City Road, London, E.C.1. Registered May 26, 1926. Manufacturers of water softening plants, evaporators, oil eliminators, separators, coolers, etc. Nominal capital, £5,000 in 4,000 8 per cent. preference shares of £1 each and 4,000 ordinary shares of 5s. each.

FIREPROOF PAINTS AND PROCESSES, LTD.—Registered May 28, 1926. Manufacturers of glues, pigments, oils, adhesives, cellulose, etc. Nominal capital, £1,000 in 850 8 per cent. cumulative preference shares of £1 and 3,000 ordinary shares of 1s. Solicitor: Kenneth E. Bartlett, 83, Cannon Street, London.

MOORE AND RAYNER, LTD., 85, Deansgate Arcade, Deansgate, Manchester.—Registered May 27, 1926. Analytical chemists and petroleum and fuel technologists. Nominal capital, £2,600 in 2,500 6 per cent. cumulative preference shares of £1, and 2,000 ordinary of 1s. each.

POLAK AND SCHWARZ (ENGLAND), LTD. Registered June 5, 1926. Manufacturers, refiners, preservers, distillers, importers, exporters of and dealers in all kinds of fruit, vegetable, mineral, chemical and other flavouring essences, etc. Nominal capital, £1,000 in £1 shares. Solicitors: Kenneth Brown, Baker, Baker, Lennox House, Norfolk Street, Strand, London.

Nitrate Prices

COMMENTING in their monthly circular on the recent reduction in the price of nitrate of soda of 1s. per metric quintal, Henry Bath and Son say that while this is welcome the effect "is more than offset by a prior reduction in the cost of sulphate of ammonia, for which prices in Belgium and Holland have been fixed by the Stickstoff Syndikat, for delivery up to December next, at approximately 15s. per ton below those of last year. Representatives from nitrate importers and the Producers' Association will sit in conference in Valparaiso towards the end of this month, and the result of their deliberations, as well as the intentions of the Chilean Government concerning a reduction of export duty, will be awaited with interest."

Dating and Sealing of Patents

THE Board of Trade have appointed a Committee consisting of Mr. J. Whitehead, K.C. (chairman), Mr. H. A. Gill, Mr. A. J. Martin, Major-General Sir Philip Nash, and Mr. J. Swinburne, to inquire into and report whether any, and if so, what change is desirable in the practice of the United Kingdom of (*a*) dating and sealing patents applied for under Section 91 of the Patents Acts, 1907 and 1919, as of the date of the application in the foreign State; (*b*) dating and sealing other patents as of the date of application, as provided by Section 13 of the Acts. The Secretary to the Committee is Mr. B. G. Crewe, The Patent Office, 25, Southampton Buildings, London, W.C.2, to whom all communications relating to the work of the Committee should be addressed.

Nitrate Factory in Dispute

ONE of the matters submitted to the Permanent Court of International Justice at The Hague related to the seizure by the Polish Government of a nitrate factory at Chorzow belonging, according to the land register, to a German society, the Oberschlesische Stickstoffwerke. This seizure took place by virtue of a Polish law of July, 1920, which ordered the substitution ex-officio in the land register of the Polish Treasury for the German Reich. The Polish Government held that the real owner of the factory was the Reich, to whom it had belonged until December, 1919, when it was sold to the Oberschlesische. Regarding the contract of sale as fictitious or as contrary to the obligations imposed upon Germany by the Versailles Treaty and by the Armistice Conventions, the Polish Government maintained that it was null and void.

The Court, considering the contract of 1919 as valid and laying down that Poland is not authorised to rely on the Armistice Convention, concludes that the attitude of the Polish Government with regard to the owner of this factory was not in conformity with the Geneva Convention.

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgments

[*NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.*]

FOX AND CO. (CHEMICALS), LTD., 16, Atkinson Street, Deansgate, Manchester, chemical manufacturers. (C.C., 12/6/26.) £15 18s. 5d. April 28.

Mortgages and Charges

[*NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.*]

DAY (JOB) AND SONS, LTD., Leeds, soap manufacturers. (M., 12/6/26.) Registered May 21 (by order on terms), £4,500 mortgage dated July 12, 1923, to L. Percival, 1, Edinburgh Gr., Leeds, leather merchant, and others; charged on Royds Mill, Beeston. *£4,200. December 31, 1925.

LAMBERT (W. J. AND T.) AND CO., LTD., Nottingham, lace dyers. (M., 12/6/26.) Registered May 25, £2,000 further charge to Building Society; charged on property in Chaucer Street, Nottingham. *£32,700. July 13, 1925.

TAYLORS' DRUG CO., LTD., Leeds. (M., 12/6/26.) Registered May 25, £2,000 mortgage to Mrs. A. R. Crowther, 6, Street Lane, Roundhay, Leeds, and another; charged on 14 and 16, Thorntons Arcade, Leeds. *£138,567 4s. 6d. November 9, 1925.

London Gazette, &c.

Winding Up Petition

FOX AND CO. (CHEMICALS), LTD. (W.U.P., 12/6/26.) A creditor's petition for winding-up has been presented, and is to be heard at the Court House, Quay Street, Manchester, on June 16, at 10.15 a.m.

Company Winding Up Voluntarily

SYNTHETIC PRODUCTS CO., LTD. (C.W.U.V. 12/6/26.) W. R. Payne, F.C.A., 6, Rowcroft, Stroud, Gloucester, appointed liquidator, May 25.

Bankruptcy Information

ROTH, James Bertram, trading as J. B. ROTH AND CO., 21, Cannon Street, Manchester, chemical and colour merchant. (R.O., 12/6/26.) Receiving order, June 4. Debtor's petition.

Business Names Registered

[*The following (trading name and address, nature of business, date of commencement, and proprietors' names and addresses) have been registered under the Registration of Business Names Act.*]

W. D. ARNOLD AND CO. (manufacturing chemist). Commenced business on April 12, 1926, at 109, Ilderton Road, North Camberwell, S.E.6. The registered proprietors are Mr. Thomas A. F. Hudson, Mr. Ernest E. Wood, and Mr. James A. Taylor.

ARTHUR BROWN AND CO. (oil shippers). Commenced business on March 31, 1926, at Bevis Marks House, Bevis Marks, E.C.3. The registered proprietor is Mr. William J. Burningham.

THE NUSIL-IT CO. (manufacturers' chemists). Commenced business on April 19, 1926, at 55, St. Martin's Lane, W.C. The registered proprietors are Mr. James A. Thompson and Mr. Herbert S. Watson.